STATE OF MINNESOTA DISTRICT COURT

COUNTY OF RAMSEY SECOND JUDICIAL DISTRICT

- -

The State of Minnesota,
by Hubert H. Humphrey, III,
its attorney general,
and
Blue Cross and Blue Shield
of Minnesota,

Plaintiffs,

vs. File No. C1-94-8565

Philip Morris Incorporated, R.J.
Reynolds Tobacco Company, Brown
& Williamson Tobacco Corporation,
B.A.T. Industries P.L.C., Lorillard
Tobacco Company, The American
Tobacco Company, Liggett Group, Inc.,
The Council for Tobacco Research-U.S.A.,
Inc., and The Tobacco Institute, Inc.,

Defendants.

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DEPOSITION OF ZALMAN AMIT, Ph.D.

Volume II, Pages 218- 345

(The following is the Deposition of ZALMAN AMIT, Ph.D., taken pursuant to Notice of Taking Deposition, at the offices of Dorsey & Whitney, Attorneys at Law, Pillsbury Center South, 220 South Sixth Street, Minneapolis, Minnesota, on August 29, 1997, commencing at approximately 8:31 o'clock a.m.)

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E X A M I N A T I O N I N D E X

WITNESS	EXAMINED BY	PAGE
Zalman Amit, Ph.D.	Mr. Silberfeld	225
	Mr. Nims	342

E X H I B I T I N D E X

EXHIBIT	DESCRIPTION	REFERENCED/MARKED
Plfs.		
Ex. 659	Expert Report by Zalman Amit, Ph.D., June 30, 1997; 10 pages	236/343
660	Doc. ent. "Comparison of Three Behavioral Techniques in the Modification of Smoking Behavior," Journal of Consulting and Clinical Psychology, by Sutherland and list; 5 pages	271/343
661	Publ. ent. "Progressive Relaxation Exercises and Human Gastric Output - A Study Using Telemetric Measures" by Sigman and Amit; 8 pages	300/343
662	Doc. ent. "Research Advances in Alcohol and Drug Problems," Volume 10, by Kozlowski and list; 8 pages	301/343

663	Doc. ent. "Appraisal of Reports in Project Hippo," BAT Co. Ltd.; 7 pages	311/343
664	Doc. ent. "The Study of Human Smoking Behavior Using Butt Analysis"; BW-W2-11922-961	314/343
665	Doc. ent."Compensation: A Review The Relationship Between Compensation and Changes in Cigarette Design"; BW-DU-00056-110	317/343
666	Doc. ent. "Effects of Nicotine on Electrocortical Activity and Acetylcholine Release from the Cerebral Cortex of the Squirrel Monkey"; BW-W2-10188-201	318/343
667	Doc. ent."Effects of Nicotine on the Central Nervous System"; BW-W2-10101-118	320/343
668	Doc. ent. "Acute Effect of Cigarette Smoke on Brain Wave Alpha Rhythm - First Report," BW-W2-10080-100	321/343

669	Doc. ent. "Research Conference" United Kingdom 1984; BW-W2-01959-02034	323/343
670	Doc. ent. "Method for Nicotine and Cotinine in Blood and Urine"; BW-W2-10038-079	324/343
671	Doc. ent. "Some'Benefits' of Smoking; BW-W2-12008-022	325/343
672	Doc. ent. "Monograph on the 'Pharmacology and Toxicology' of Nicotine and its Role in Tobacco Smoking" by Cohen and Roe; 58 pages	328/343
673	Doc. ent."The Action of Nicotine in the Brain" by Burn; 105547861-871(?) {# unreadable}	332/343
674	File Note, Jul 14, 1967, Current Chemistry Research at Southampton; 500012128-142	332/343
675	Declaration of Ian L. Uydess, Ph.D., 29 February 1996; 25 pages	336/343
676	Doc. ent. "Cold Turkey in Greenfield, Iowa: A Follow-Up Study" by Ryan; 1001840710-721	337/343

677	Cover page of doc. ent. "Regulation of Tobacco Products, Hearings before the Subcommittee on Health and the Environment of the Committee on Energy and Commerce, House of Representatives One Hundred Third Congress		340/343

P R O C E E D I N G S

(Witness previously sworn.)

ZALMAN AMIT, Ph.D.,

having been called as a witness and having been previously duly sworn, testified under oath as follows:

MR. SILBERFELD: You wanted to put something on the record?

MR. NIMS: Yes, Dr. Amit believes that he needs to add something to yesterday's testimony that he recalled last night in order to make his testimony accurate.

CONTINUED EXAMINATION

BY MR. SILBERFELD:

Q. What is that, Doctor?

A. That in our conversation about -- in the discussion about the number of people that served as the basis for the book I forgot a group that I didn't mention because I forgot and that's a group of subjects that served as an experimental group in a Master's thesis of one of our students, actually E. A. Sutherland's student, and I, with the passage of time and all this, forgot about it.

Q. How many patients was that?

A. I don't know. I don't remember.

Q. Give me your best estimate.
A. I can't. I mean I don't know. I don't remember.
Q. Was it ten? Was it a hundred?
A. No, no, it was more than ten.
Q. Was it a hundred?
A. I can't testify to that. It could be a hundred. But I -- I'm not prepared to say.
Q. Give me the best range that you can.
A. The best range would be between 50 and a hundred.
Q. So if we had roughly a hundred patients as a result of yesterday's testimony what we're adding now is perhaps 50 or a hundred patients?
A. Yes.
Q. So that the total number of people that were seen either in the clinic or in the individual sessions as a result of the graduate student's thesis work or anybody was clearly no more than two hundred total; true?
A. That appears to be the case.
Q. And using -- well withdraw that.
Would it be fair to use the same success percentage, for lack of a better term, that we used yesterday, approximately 10 percent that we had for

the hundred patients yesterday, and apply that to the 200 patients?

A. I believe that's fair.

Q. So that if we revise all the testimony yesterday about the numbers in the book and -- and so forth, now your testimony would be that approximately no more than 200 patients were seen all told; true?

A. Yes, that's --

Q. And --

A. -- that's what I believe it is.

Q. And that approximately 20 of those had success with the program?

MR. NIMS: Objection.

A. No, I mean we've talked about the definition of success. I would say that about 10 percent of them to the best of my recollection --

Q. Yes.

A. -- have quit. The number of people that reduced their intake, which at the time we considered to be a success, was larger than that.

Q. What was --

A. As I mentioned to you -- as I mentioned to you, there was a large -- you know, a group -- we've looked at the effects of this manipulation of this treatment or procedure in two ways; the number of

people that quit, --
Q. Uh-huh.
A. -- and the number of people that -- that reduced, significantly reduced the amount of cigarettes.
Q. What was that percentage?
A. Approximately about 60, 65 percent.
Q. Okay. Let's use 65 percent. So that of the 200 patients approximately 135 of them, if my math is right -- is that right?
A. Since I don't remember the exact numbers anyhow --
Q. Well --
A. -- it doesn't matter.
Q. Yeah. 65 percent of 200 I think is 130.
MR. McDONNELL: It is.
MR. SILBERFELD: Thank you very much.
Q. Approximately 130 patients reduced their smoking.
A. Uh-huh.
Q. And just to be clear again, all these people were followed for 90 days?
A. I cannot tell you that the people in the study, the Master's thesis of the student, were followed for 90 days simply because I don't remember.

Q. What is your impression, that they were followed more or less?

A. If -- in all likelihood -- again, I do not remember, but in all likelihood it's less.

Q. In that 1975-76, that time frame, was there a protocol with respect to smoking cessation programs as to how long patients should be followed to see if there's relapse?

A. A universally-accepted protocol?

Q. No.

A. Not to my knowledge.

Q. Were you aware of any protocol?

A. No, and I'm not aware now in retrospect of any protocol, so I can't tell you -- there could have been some, but at this point I don't remember whether in 75, 76 there was a -- a protocol that was -- had some level or general level of acceptance. I can't -- I can't -- I don't recall that.

Q. You are aware; are you not, at the present, that the one-year follow-up seems to be a time frame that is regularly and routinely used in the follow-up of smoking patients who try to quit?

A. I am aware of a very large range and -- in follow-ups. Yes, I've seen some studies where a year has been used, I've seen some studies where three

months has been used, six months has been used, and I believe, I couldn't quote you the actual study, but I believe I've seen studies where two years has been used, so I think it's more accurate to say there has been a wide range of follow-up periods that have been used up to the present.

Q. All right. Who was the graduate student that did this work?

A. Zeve Roseberger.

Q. Is that the same Roseberger --

A. The same Roseberger that was the author of this paper that was published in Clinical and Consulting Psychology. We give our students credit.

Q. Sorry?

A. We give our students credit.

Q. And was Roseberger's study published anywhere individually?

A. No, it was -- it was submitted as a thesis, a Master's thesis in defense of his thesis and was accepted, he got his Master's degree, and I don't believe that it was ever published.

Q. Where is Roseberger now?

A. No idea. That's 20 odd -- 20 odd years ago. I know that right after his -- right after his graduation he worked in the Jewish General Hospital

in Montreal, but that's about all I can tell you.
Q. And do you know if he went on to get his Ph.D.?
A. I don't know that.
Q. Uh-huh. He left your program after the Master's?
A. Yeah, he was not directly my student, he was part of the group, was supervised by E. A. Sutherland who was my partner at the clinic and is today my wife, but that's all I can say. I don't remember whether he got his degree. It's very possible. I -- I simply don't remember.
Q. How is it that you remembered his population of students?
A. From a conversation with my wife last night.
Q. Tell me about the conversation.
A. I called her, as I usually do.
Q. Other than the pleasantries.
A. Well, yeah. I -- she asked me how things went here, and I said that I thought things went reasonably well with the exception of one issue concerning the numbers that were in the jacket of the book, and she said, "What's the problem with that?" And I said, "I recalled that we based these things on the study and on the people that were referred to the clinic and that doesn't amount to $300" -- "to 300

people." I was going to say $300. To 300 people. And she said, "Yeah, but you forgot Zeve's thesis." And I recalled Zeve's thesis. That's without the pleasantries and whatever, the essence of the conversation.

Q. Including Zeve's thesis, the numbers still don't total 300, do they?

A. To the best of my knowledge they do not total -- they still do not total 300.

Q. Not even close?

MR. NIMS: Objection.

A. Close is in the eyes of the beholder, but they don't total.

Q. How about in your eyes? How about in your eyes, are they close?

A. There is a significant discrepancy between the number, but you see, I gave you a very rough estimate because I don't know exactly how many people were in that thesis so there is a certain level of discomfort about that. I am only prepared to say that there is a significant discrepancy between the numbers as they stand now with the correction and the numbers that appear on the -- on the jacket of the book.

Q. The 1975 paper was a paper that included 53 volunteer smokers; right?

A. Let me read it.

(Witness reviewing document.)

A. Yes.

Q. And of the 53 patients, two of -- two groups were created of controls?

A. That's correct.

Q. How many patients were in the two control groups?

A. Probably about half.

Q. So that the study group would have been approximately half of 53?

A. Approximately half of 53, that's correct.

Q. And so the -- the results of the various methods used to try to affect the patients' smoking behavior would really only count as the half that were studied, not the half that were controls; true?

A. That is correct.

Q. Of the groups that were run at The New Clinic --

A. Yes.

Q. -- after the publication of the 75 paper --

A. Yes.

Q. -- what's the largest number in any group that you can recall?

A. I don't recall.

Q. You have no idea at all?

A. No.
Q. The group that appeared to have done the best was the group that had what method of treatment applied to them?
A. I will have to look at the paper.
Q. It's in the lower right I think.
(Witness reviewing document.)
A. It's the combination of satiation and relaxation.
Q. And that group actually demonstrated an 85 percent reduction in consumption?
A. I will have to look at the paper again.
(Witness reviewing document.)
(Discussion off the stenographic record.)
A. Yes.
Q. The group that was treated with satiation smoking only --
A. Yes.
Q. -- had a 30 percent drop in smoking consumption, just assume that that's true, and then after three months they were at 102 percent of their prior smoking consumption, cigarette consumption; right?
A. That is correct.
Q. What is the explanation for that?
A. The explanation is that we did not --

theoretically did not introduce in that group an incompatible behavior once the behavior was suppressed. I've explained yesterday that the theory involved two components; to suppress the behavior to be changed and to introduce in its stead another behavior that is incompatible with it. We, as I mentioned again yesterday, considered the relaxation as that incompatible behavior. The group that had only satiation showed the expected drop or that they -- since there wasn't any -- any relax -- relax -- incompatible behavior that was introduced in place of that suppressed behavior, presumably because of that they have then rapidly re -- recovered their previous behavior.

Q. Why did they go to a level of smoking, this satiation group, higher than they had been before?

A. Statistically 102 and 100 are the same. There is no significant difference between 102 and 100. The standard deviation here is going to be bigger than that. Sorry, the standard error is going to be bigger than that.

Q. Did you calculate the standard error?

A. I'm sure we calculated the standard error, you can't do statistics without calculating the standard error, but I can't tell you what -- you know, I can't

tell you what it was.

(Discussion off the stenographic record.)

Q. Okay. We'll get back to the paper in a little while.

Let me ask you to look at your report, if you would, and let's finish our conversation about it. In fact I don't believe we've marked it. Let me mark it as next in order.

Is that 659?

COURT REPORTER: Yes it is.

MR. SILBERFELD: Doctor, let me just have that for a moment, if I may.

Can I keep this on there?

MR. NIMS: Doesn't matter to me.

MR. SILBERFELD: We know we're on page 1.

(Plaintiffs' Exhibit 659 referenced for identification.)

Q. Doctor, if you would turn to page 3. At page 3 near the top of the page you're describing your views regarding the reemergence of the term "addiction", which really begins on the prior page, but at this point you say, "...the unfortunate nature of this development," referring to the reemergence of the use of the term "addiction", "is not derived exclusively from the unwarranted usage of this pejorative term in

scientific parlance." And here's what I want to focus on: "The reemergence of the term addiction, by its very nature, necessitated the reappearance of the concept of physical dependence and withdrawal symptoms as critical components in defining addiction or diagnosing an individual as an addict." Do you see that?

A. I see that.

Q. Do you agree with the statement that a substance that produces physical dependence and withdrawal symptoms defines addiction?

A. I agree that the person that exhibits, upon the cessation of the administration of a drug or chemical compound, withdrawal symptoms, which are the -- the cornerstone component in defining physical dependence, was defined by certain people over certain periods as the primary definition of addiction. That is not to testify whether that is a correct procedure, a correct thing to do or not, but that was a his -- this is a historical fact, yes.

Q. As a matter of present-day knowledge and understanding --

A. Yeah.

Q. -- do you believe that a person who has a physical dependence on a substance or a drug that is

characterized by not only the physical dependence but by withdrawal symptoms as well may be considered an addict?

A. No, I don't think that that adds to our -- there isn't any set of circumstances that in my opinion will justify the use -- the use of the term "addiction". It is a non-scientific term, it doesn't add anything to the understanding of the phenomenon, and therefore no circumstances will justify in my opinion the use of the term "addiction". The -- it is correct that some people across the history of this field have used "physical dependence" -- and by the way, there isn't physical dependence and withdrawal symptoms, withdrawal symptoms -- without withdrawal symptoms there's no physical dependence --

Q. All right.

A. -- so it's one and the same -- used that as the definition of what they called addiction.

Q. So your view in 1997 is that the term "addiction" should not be used in science or medicine at all?

A. That is correct.

Q. That's fine for People magazine but it's not fine for science or medicine, true?

A. I don't know what People's magazine, I won't speak for them, but it shouldn't be used in science and medicine.

Q. Okay. To describe any state?

A. That is correct.

Q. Okay. What is the basis of your statement that nicotine in cigarettes does not produce a physical dependence?

A. The descriptions of -- of the reactions of people who have been long-term smokers and who have quit smoking appears in many -- in many publications, and it is actually described in -- to some agree in the DSM, and I believe that that set of symptoms that has been seen by people that observed smokers that ceased smoking is very different than the set of symptoms that we see in classically physically -- withdrawal-producing drugs, and they are not any different than symptoms that we see in gamblers that have stopped gambling or people who have been -- had to make abrupt changes in their diet, and therefore to me this is not withdrawal symptoms in the correct sense of the word.

Q. The correct sense of the word as you see it is that withdrawal symptoms have to be accompanied by physical signs or symptoms of withdrawal rather than

psychological ones; true?

A. Primarily physical, yes, and without that the -- the -- the -- the assignment of the term "withdrawal symptoms" to them is questionable.

Q. You say "primarily". Is there any physical component --

A. Oh, yeah. I'm sorry -- I did not -- I interrupted you.

Q. That's all right. Is there -- let me start all over.

A. Okay.

Q. Is it your view that the withdrawal symptoms associated with smoking, to the extent there are any, are psychological, not physical?

A. The symptoms that people -- that some people, not all, some people exhibit when they cease smoking are all related to their emotional status and in this -- in this case therefore they will qualify as what we call psychological in nature. They're not physical, no.

Q. Are there any physical symptoms from the cessation of smoking --

A. There has been some reports -- I'm sorry.

Q. Go ahead.

A. No, that's not fair, I interrupted you again.

Q. That's all right.
A. Bad manners.
Q. Are there any physical symptoms of the cessation of smoking that you're aware of that you ascribe to that are described in the literature?
A. The only one that I have seen mentioned more than once is changes in pulse rate.
Q. And what does that suggest to you in terms of the effect of cigarettes on the smoker?
A. It does -- unfortunately to me it doesn't suggest anything because changes in pulse rate are observed with stress, with nervousness, with any -- unrelated to -- to the intake or lack thereof of chemical substances or anything like that, so this is a very general reaction to an emotional state; therefore no, it doesn't mean anything to me by itself.
Q. You would regard that as a nonspecific finding?
A. Very correct.
Q. All right. Are you aware of any other physical symptoms of withdrawal described in the literature related to smoking?
A. No, not what I would consider physical symptoms, no.
Q. Which DSM version were you thinking of when you

said that the DSM describes certain sets of symptoms?
A. DSM IV.
Q. And you regard the symptoms described in DSM IV as completely psychological with the possible exception of a change in pulse?
A. Yes. Even, as I tried to explain and try not to -- to contradict, you know, my own position, I really don't -- as I said, I don't really consider changes in pulse rate a physical symptom as such, but it is something that we can physically measure, and a change in body status is physically measured so we have to -- I have to include it. No, other than that I am not aware of any. As again I mentioned before and I want to mention again here, that even though that symptom, like any of the other symptoms that have been ascribed to nicotine cessation --
Q. Yes.
A. -- or smoking cessation, are seen only in a percentage of the people and it varies from one study to another, but I do not believe that there is any study that says that that was experienced by all the people that have ceased smoking.
Q. Well in order for the phenomenon of withdrawal and physical dependence to be true about a substance does it have to be true in every single user?

A. In opiates it is true in just about -- somebody will show me one single individual that didn't show that I will not eat my hat, but -- but the -- in opiates it is true about just about everybody that have taken opiates on an ongoing basis for -- for a period of time. With barbiturates it's absolutely true, again just about with the same proviso about one here and there, the same thing. In alcohol it is less than that. In --

Q. It's less than all?

A. Less than what we see in barbiturates and opiates, therefore less than all, but still much higher than at least figures that I've seen for the percentage of people that exhibit significant DSM-like let's call it withdrawal symptoms.

Q. From smoking?

A. From smoking.

Q. What are those figures that you have seen?

A. I've seen figures 28 percent I remember one study, around a third. Around a third of the population.

Q. Let's just use that as a bench mark for a moment.

A. Okay.

Q. In the -- in the opiates and in the barbiturates

I take it that the withdrawal symptoms and physical dependence phenomena are present more than 90 percent?

A. More than 90 percent.

Q. And what about alcohol?

A. I would say in -- it's more complicated with alcohol because of the very -- variable nature of the usage of alcohol compared to these other drugs. But I would say that for people that have been drinking above the oxidative capacity of the body for long periods of time, meaning for -- for several years, the percentage of withdrawal will be somewhere in the neighborhood of 70 percent.

Q. Define physical dependence as you use the term on page 3 of your report.

A. Are you referring to the statement "The reemergence of the term addiction, by its very nature, necessitated the reappearance of the concept of physical dependence and withdrawal symptoms as critical components in defining addiction or diagnosing an individual as an addict" --

Q. Yes.

A. -- in that statement?

Q. Yes.

A. Physical dependence as far as I'm concerned is

defined by -- has been defined in the literature by two components; the emergence of withdrawal symptoms, a set of repeatable, reproducible, predictable set of symptoms, and the emergence of the disappearance of -- I'm sorry -- and the development of tolerance. That -- these are the two classical sets of symptoms or sets of phenomena that have been used as the building stones in defining physical dependence.

Q. Is repeated and compulsive use of a substance a factor in your definition of physical dependence?

A. No.

Q. Why not?

A. Because it has nothing to do with physical dependence. It has nothing to do with the -- with the physical nature of the -- of the phenomenon. I mean the definition of that by -- in the literature never includes repeated and compulsive use, there was always the definition of psychological dependence, or psychic dependence as it was called.

Q. Uh-huh. Does repeated or compulsive behavior leading to use of on substance play a role at all in determining whether an individual is either dependent on the substance or addicted to it?

A. I will not answer or addicted to it, but it does play a role in -- in determining whether the person

is dependent on a substance.

Q. Okay. That's what my question was.

So have you looked at -- In your three years since you met Mr. Nims, following the literature about cigarettes and smoking and smoking behavior and nicotine, I take it you've looked at literature throughout on that -- on that subject and --

A. Yes.

Q. -- you've collected about 100 papers about that, they're all back in Montreal?

A. It's all back in Montreal. I came as clean as the driven snow.

Q. With a nice tie.

A. Thank you.

Q. Have you looked at any studies that describe the percentages of people who regularly and compulsively use cigarettes and their patterns of use?

A. Can you elaborate on that?

Q. Sure. Are you aware of any statistics that describe the patterns of use of cigarettes by smokers in the United States?

A. Yes.

Q. Okay. Are you familiar with the work of the Centers for Disease Control?

A. Some.

Q. In 1991 and 1990 -- 1987 and so forth?
A. Somewhat. I will not quote from it because I don't remember it sort of from on the top of my head, but I'm aware of some of the work that they have done, yes.
Q. Would you agree with the finding that 87 percent of people who smoke cigarettes smoke every day?
A. I will not fight with that, no. I mean I would -- I would agree. Whether it's 87 or 80 or 88 I can't say, but that -- but I would not argue with that number.
Q. You're satisfied that the number of people who smoke cigarettes who smoked every day is somewhere in the 80 percent range?
A. It's very high, yes.
Q. Do you agree with the statistic that nearly two-thirds of smokers have their first cigarettes within the first half hour after they wake up?
A. No, I don't have any independent knowledge of that. Okay. I don't -- in other words, I don't recall a study that says that and established that, but I'm not going to argue about that; in other words, it's possible.
Q. You haven't seen any such references in the literature?

A. I can't even tell you I haven't seen, right now.
Q. You -- you just don't remember as you sit here?
A. Yeah, as I sit here now I don't remember, the same way as you said. Even though I can't quote the 80 something number, that is something that certainly -- I mean that kind of percentage is something that I've seen, it's possible, but I can't -- I can't testify to that.
Q. Do those two factors, that roughly 80 to 90 percent of people who smoke smoke every day on the one hand, and nearly two-thirds of people who smoke have a cigarette within 30 minutes of waking up in the morning, do those two factors suggest to you that people are dependent upon cigarettes, either physically or psychologically?
A. The first -- the first number is much more meaningful to me, I --
Q. Okay.
A. And yes, it would -- it would load on the dimension of dependence.
Q. Tell me why.
A. Because, as I mentioned yesterday in our conversation, the definition of dependence to me is on a continuum that is driven by the reinforcing properties of the substance that people take. The

definition of reinforcement is that with every incident or event of intake there is an increase both in the probability and the frequency of -- of the next event occurring; therefore, when I see a person that fulfills that criteria by regularly continuing to take it, I have to concede that that person observed, that that person fills this criteria, my criteria of dependence, so therefore a person that smokes every day, presumably smokes several cigarettes every day, fulfills that criteria.

Q. You're aware in a general sense; are you not, Dr. Amit, that people continue to smoke notwithstanding efforts to quit? They try to quit, they fail, they continue to smoke; right?

A. Some, yes.

Q. Well the vast majority?

A. No.

Q. No?

A. No. There are today to my knowledge more people that quit -- in North America more people alive that quit than people that smoke. That would belie that argument.

Q. Some people quit because they die?

A. I said alive.

Q. Some people quit because they die, --

MR. NIMS: Objection.

Q. -- right?

A. I don't understand it. I mean some people die, and all behavior ceases; they stop eating, they stop smoking. I don't think we need to define that. But the statement that I made I think is -- is a fair statement, that there are today alive more people that quit than people that smoke. That is in my opinion not in line with the suggestion that the vast majority of the people continue to smoke despite efforts to quit.

Q. Uh-huh.

A. The trend in -- in quitting or the -- the percentage of quitter -- of smokers has been on a decline, I don't think that I am discovering America here, has been on a decline for many, many years, and on a steady decline.

Q. Uh-huh.

A. These figures to my mind don't support that contention that the vast majority of the people have difficulties. I also mentioned yesterday the fact that the -- the -- the department, the ministry -- the American Department of Health in its report, Second Report to Congress, I believe, said that 60 percent of the people that try to quit quit on the

first or second attempt. Again, I think that that doesn't support that -- that proposal that you put before me.

Q. Do you accept as true the statistic that each year in the United States 15 million people try to quit but less than 3 percent have long-term success?

A. On the basis of the information that I have and that I described to you, I -- I doubt very much that -- I doubt these figures.

Q. You doubt that they're correct?

A. That's correct, yes.

Q. I will represent to you that that's from the Centers for Disease Control, the MMWR.

A. I understand.

Q. What's the basis of your doubt?

A. I just -- I think I just explained that. I believe that --

Q. Well is it a feel or is it a paper?

A. I said -- no, I think that I explained, that when we have numbers like that 60 percent of people that try to quit quit on the first or second attempt, when we have figures that I think are not debateable, and this is that there are in the neighborhood of 50 million people that quit cigarette smoking in North America, when we --

Q. Over what period of time?
A. Now, today. Today there are about, according to the figures that I have seen, about 50 million people who will classify themselves as smokers who quit smoking and are not smoking any more, and if we add to these two facts that I just described before the fact that the -- that the decline in smoking is significant and is noticeable on any graph where the regression line is significant, no, I don't see how these numbers can be correct.
Q. In terms of physical dependence does persistent use of a substance in the phase of knowledge about health effects of using that substance play a role in your mind in defining what physical dependence is?
A. No.
Q. Why not?
A. Because once again, it doesn't fall within the def -- the accepted definition that is based solely on the emergence of withdrawal symptoms and tolerance. It is a factor in dependence, but not in physical dependence.
Q. Okay. What role does it play in dependence; that is, that the person continues to use the substance despite knowledge or notice or some information about harmful consequences?

A. Both the World Health Organization and I believe also the DSM and -- have stated that one of the con -- the criteria of psychological dependence is persistent use despite, and I will make a little modification to what you're saying, despite evidence, not knowledge, evidence --

Q. Yeah.

A. -- of some harm to himself and to his surround. That has been a component of psychological dependence as proposed both by the World Health Organization and by the American Psychiatric Association, so in that sense if we're talking about persistent use, in spite of evidence of harm, that would be a component of what the World Health Organization proposed we call psychological dependence.

Q. And you agree with that?

A. I agree with that.

Q. What is cognitive dissidence?

A. The best way that I can describe cognitive dissidence is that a dancer that can't dance says that the floor is crooked.

(Laughter.)

Q. Or a batter that misses the ball looks at the bat.

A. That's right.

Q. Do smokers engage in the mental gymnastics of cognitive dissidence?

A. Without any question some smokers, a percent, I can't give you the actual percentage, but to my mind -- this is not a science and it's not a data-driven statement -- it's my impression that smokers, a percentage of smokers get involved in cognitive dissidence, yes.

Q. And that's also referred to as rationalization, cognitive dissidence?

A. Yeah, it's a component of rationalization. People use rationalization, many, many ways to rationalize all kinds of things, but I would certainly agree that cognitive dissidence can be categorized under rationalization.

Q. And denial is another way of describing the same phenomena?

A. Denial, now you have to be more specific. Denial of -- of what? Of --

Q. Denial of the evidence that the persistent use of a substance may result in harm, as justification for the continued use of the substance?

A. If we talk now in general terms, yeah, I think that that's a -- that's a fair statement, yes.

Q. Does that apply to cigarette smoking?

A. I'm sure that some cigarette smokers have done that, yes, some.

Q. And are cognitive dissidence, rationalization, or denial, to the extent that the definitions of them overlap, a component of dependence as it relates to cigarette smoking?

A. I don't know of any statement that I know of that has included that as the definition -- as part of the definition of -- of psychological dependence.

Q. Are you familiar with statistics that discuss how many lung cancer patients resume smoking after surgery?

A. No.

Q. Would 50 percent seem about right to you?

A. I will not comment on that. I have no idea.

Q. Okay. You have not seen any studies about that?

A. No.

Q. How about people who have laryngeal cancer and had their larynx removed?

A. Same as before, I have no knowledge of that. It's not in my area of competence and I am not going to comment on that.

Q. Okay. Let's talk about the second component here on page 3. The first was physical dependence. The second is withdrawal symptoms. I know they're

interrelated, --

A. Okay.

Q. -- but we've divided them magically here today. The --

A. I divided them?

Q. I did.

A. I'm sorry.

Q. My prerogative to do that.

A. Absolutely.

MR. McDONNELL: Aah?

Q. Do you agree or disagree with the statement that abstinence from smoking is often accompanied by powerful cravings for cigarettes?

A. No, I do not agree. But I do not agree on principle.

Q. What does that mean?

A. I'm not sure if we know, "we," scientists, behavioral scientists know what we mean when we talk about cravings. I haven't seen a definition that suited me. There is an eminent scientist by the name of Tiffany who says that there is no such things as cravings, I have never seen it, I think that cravings is a mentalistic concept, it's a non-measurable concept, and therefore I do not agree to anything that will include a definition of cravings.

Q. Anyone who uses that term is engaging in non-science as far as you're concerned?
A. In circular -- yeah, in circular definitions, yes.
Q. So to the extent Dr. Benowitz, whom you know of, --
A. I know of, yes.
Q. -- to the extent he used that term that would be non-science as far as you're concerned?
A. Absolutely.
Q. Are you familiar with his 1992 paper on the subject, "Cigarette Smoking and Nicotine Addiction"?
A. I believe so. I can't connect. I've seen several papers of Dr. Benowitz. If you will show me the paper, I will be able to tell you.
Q. Okay. Are you aware of any comparative studies where smokers compare the effects of nicotine with the effects of other drugs that they also use?
A. Yes.
Q. Which studies are you familiar with?
A. There's a study by Henningfield plus, I don't remember who are the other people, but there was a study by Henningfield and some others.
Q. That's the Abuse Liability and Pharmacodynamic Characteristics paper?

A. If you won't hold me to the exact name, I think so, but I am not honestly sure.
Q. And what did Henningfield and his colleagues find?
A. They reported that people rated their -- I mean, you know, basically rated their nicotine effects, power, impact, whatever way you want to call it, as high or even higher than opiates and cocaine, I believe, but some of the -- the more classical -- classical substances.
Q. Uh-huh. And do you agree with their conclusion?
A. No. No, I'm not the only one that doesn't agree with that conclusion.
Q. The others aren't here so I only get to ask you.
A. Yes, but there is a published report by Professor Warburton from -- from England that recalculated their figures and concluded that their -- they misrepresented their data.
Q. Okay. So Henningfield was wrong?
A. Henningfield was wrong.
Q. Warburton was right?
A. I believe that Warburton was right, yes. I think that Henningfield was wrong, yes. I think.
Q. Do you agree or disagree that nicotine

replacement therapy significantly reduces withdrawal symptoms in smokers who are attempting to quit?

A. I'm not aware of that.

Q. Are you familiar with any of the literature regarding any of the nicotine replacement medications or products?

A. Oh, I'm familiar with some of the literature on nicotine replacement in various products, yes.

Q. Have you looked at any NDAs, New Drug Applications, for substances such as Habitrol or Nicotrol?

A. No.

Q. Prostep?

A. No.

Q. Nicoderm?

A. No.

Q. What you're familiar with with respect to nicotine replacement substances, does that include a finding that withdrawal symptoms seem to be reduced in those people that use those medications?

A. Since, as should be evident from our conversation before, that I don't believe that -- that cessation of smoking produces withdrawal, it's very difficult for me to comment on that.

Q. Well I'm not -- I don't ask you to accept it as

true, I'm just asking you whether you are aware that those reports and those documents report that?

A. No, I'm not aware of any -- I'm not aware of reports. I'm not saying they don't exist, but I'm not aware of reports that talk about the effects of nicotine replacement on withdrawal symptoms. I am aware of other aspects of -- of nicotine replacement, but not that, no.

Q. Let me refer you back to your report.

A. Same page.

Q. Same page. Actually the same paragraph.

A. Uh-huh.

Q. You say in the middle of the paragraph, referring to the phenomenon of drug dependence, that "this concept was almost totally lacking in data driven support". Do you see that?

A. Yes.

Q. What's the basis of that statement, sir?

A. I am not aware of any -- no, not any -- I don't -- I'm not aware of any significant, substantial studies that show that physical dependence or withdrawal symptoms are -- play a role; in other words, contribute to the variants of the continued use of drugs.

Q. The next paragraph, you continue on with the

same theme by suggesting that since there's no data driven support for physical dependence "these had to be invented". Do you see that phrase?

A. Yes.

Q. Who invented these? We're talking about the withdrawal symptoms. Who invented them?

A. I think that the group that helped the Surgeon General write his report contributed to that invention. I am not saying that they were the only ones, but they certainly were a conspicuous group that helped the Surgeon General re-invent that concept.

Q. And it is an invention, as you see it; that is, a complete and utter fiction; right?

A. These are strong words. I will --

Q. Well, the invention's your word.

A. No, no, the invention, I did not object to the word "invention".

Q. Okay.

A. It's the pure and utter fiction or something like that.

Q. Well is it a pure and utter fiction?

A. No, it is not a pure and utter fiction. Withdrawal symptoms occur, okay. Withdrawal symptoms as a result of cessation of the use of certain drugs

occurs. The question is: Does it contribute to the continued use of drugs? I argued that there is no evidence for that. Other people, among them those that participated in the preparation of this document, argued otherwise, and in my opinion without evidence invented -- re-invented a concept that was just about taken out of -- of the literature.

Q. This invention was an unfortunate occurrence, as you see it?

A. In my opinion, yes.

Q. And each and all of the people who are listed as having participated in the preparation of the 88 Surgeon General report to one degree or another are responsible for the invention?

A. No, I'm not saying that.

Q. What are you saying?

A. I have no idea what was the net contribution of each and every one to the report, what they did, what they said. I refuse to believe that such a large group of people all participated in every aspect of the report, so I'm not going to cast dispersions on their character or reputation without knowing exactly who was the one that pushed for the reemergence and readoption of physical dependence as a -- as a factor.

Q. Have you yourself participated at any time in study groups or conclaves, if you will, where health professionals get together and try to answer a difficult question in science?

A. Yes, many times.

Q. And it's true; is it not, that the way such processes evolve is that people with various points of view get together; right?

A. Yes.

Q. They talk?

A. Yes.

Q. They submit data to one another?

A. Yes.

Q. Perhaps they review one another's writings and papers and so forth?

A. Correct.

Q. And then, generally speaking, a consensus emerges; isn't that true?

A. No, the last statement is not true. I mean the incidents where there is no consensus despite the sharing of data and the sharing of information and discussions are quite frequent and quite common in science. We call them disagreements, controversies, and they're quite common. The fact that this is one of the venues through which people try to reach a

consensus is quite correct.
Q. And in this particular case, in the case of the Surgeon General's report, a consensus was reached?
A. If you -- if you ask me to assume that because you're saying it, I will, but I don't have any independent knowledge of whether there was somebody who was an authority and decided, whether there was a majority prevailing over a minority, I have no idea, so I'm not going to -- I'm not going to comment on that. If you're telling me that you know and I will assume that, by all means I will assume that, but I don't know that independently.
Q. Well do you have any reason to believe that the process of the work done by the Surgeon General and the consultants who participated in the 88 report was any different than what we just talked about?
A. I have no reason to assume that, but as you -- as you said before in your initial suggestion to me on the process, you said people come and they shared data. That's a critical component. I am not aware of any data that subserved the decision of the people that prepared this report that -- that subserved their decision to reintroduce physical dependence as a component of what they called addiction, so as far as I'm concerned they made two mistakes: they have

reintroduced the term "addiction" unjustifiably, unjustifiably in the sense that there wasn't any data to show why we have to now back -- recede back from dependence back into addiction, and why we have to re -- reintroduce physical dependence into our concepts, so I don't know -- if -- I don't know of that data. If they would have -- if they would have shown data on that, I would have -- data that would have convinced me, significant data, I would have then had to at least concede that physical dependence has to be reintroduced. That would still not say anything about addiction.

Q. From what you understand about the 88 Surgeon General report and the process leading to its issuance, do you believe that people of differing points of view participated in the work that resulted in the issuance of the report?

A. I am sure that there were -- I mean it's a large group of people there, so I'm sure that there was some difference of opinion, but I'm not sure -- I'm not sure, I'm not saying it definitively, that people that represent the kind of views that I uphold were represented there.

Q. You don't know if they were or you believe --

A. I don't --

Q. -- they weren't?
A. No, I do not. I'm not aware of it, no.
Q. You yourself I know did not participate.
A. No.
Q. Name for me somebody who shares your point of view.
A. David Warburton shares my point of view.
Q. Anybody else?
A. Michael Bozarth shares my point of view.
Q. How about Paul Clark?
A. No, no, Paul Clark did not share my point of view at all.
Q. Who else? How about Dr. Jarvik?
A. Does not share my point of view.
Q. Who does?
A. Well I already --
Q. Warburton, we talked about that.
A. Warburton, Bozarth. To some degree Eysenck.
Q. How do you spell that?
A. Hans Eysenck. A -- E-y-s-e-n-c-k.
Q. Uh-huh. Go ahead.
A. I was going to say something, perhaps unwarranted. There are many people that share my point of view, but not in public.
Q. Is the Warburton you talked about David M.

Warburton?

A. I believe so, yes.

Q. Professor of the Department of Psychology, University of Reading?

A. Reading, yeah.

Q. White Knights --

(Reporter interruption.)

Q. White Knights, K-n-i-g-h-t-s.

MR. McDONNELL: That's us.

Q. United Kingdom.

A. Yeah, that seems to be the man.

MR. SILBERFELD: That was good.

Q. Let me show you the acknowledgments listing the people who participated in the 88 Surgeon General's Report. Do you see Dr. Warburton's name there?

A. Yes, I do.

Q. I don't know if I asked you this previously, if I did I apologize for asking it again: Have you read this document?

A. The whole document, no.

Q. That's the 88 Surgeon General's Report.

A. No, no, I have not read the whole document. It's beyond my capacity.

Q. I doubt that.

In any event, the -- the invention of the

physical withdrawal symptoms occurred in part by these people who participated in the 88 Surgeon General's Report; right?

A. By some of these people. I -- again, I have no knowledge, as I said, of their -- of their participation, of their -- their relative contributions, but certainly some of the people there participated in that re -- what I consider to be a re-invention, yes.

Q. Turn over to the next page of your report; it's page 4, please. Near the end of the first paragraph there you say, "Furthermore, cigarette usage and its cessation does not result in clearly observable signs of intoxication that interfere in the functioning of the individual in any way different than, for example, symptoms observed in gamblers who were deprived of their habit."

A. That's correct, yes, I agree with that.

Q. Is intoxication today, 1997, a required finding as far as you're concerned?

A. For what purpose?

Q. For the purpose you use it here, dependence and withdrawal?

A. Oh, sure. Sure. I don't believe that you can have withdrawal in a drug that doesn't produce

intoxication.
Q. So at the use-of-the-drug stage there has to be an intoxicating effect because it is only that that will bring about --
A. I believe so, yes.
Q. -- it is only that that will bring about withdrawal; right?
A. That is a necessary component in the set of influences that bring about withdrawal, that's correct.
Q. Are you aware of any studies that describe intoxicating effects, euphoric effects, pleasurable, rewarding effects by cigarettes in cigarette smokers?
MR. NIMS: Objection.
A. Do I continue?
Q. Please.
MR. NIMS: Sure.
A. I'm not aware of any reports about euphoric effects of cigarettes, I'm not aware of any reports of intoxication with cigarettes, you've asked -- is that -- I mean is that --
Q. Rewarding effects, any reports of --
A. No, no, rewarding effects and euphoric effects and intoxicating effects are two different terms. Rewarding you will need to -- if you are using

rewarding as synonymous with pleasurable, --
Q. Yes.
A. -- I'm not aware of any observable studies that showed pleasurable -- you know, pleasurable effects of -- of smoking.
Q. Near the bottom of that page and then we'll take a break, second sentence from the end, beginning with the word "Success"; do you see that?
A. "Success or failure".
Q. Yes, "Success or failure in this task," referring to quitting, "seems to depend primarily on the seriousness of the decision to quit and the effort invested in it"; right?
A. Yes.
Q. That is one of the centerpieces of your opinion; is it not, about people's efforts to quit or the ability to quit?
A. That's a major -- major component of my view, yes.
Q. And how long have you held that view, sir?
A. For a long time.
Q. 20 years?
A. No, less than 20 years. As you know, around 20 years ago I had some -- some different views. I thought that I developed a -- a system that was

effective and so on. But I'm not going to quote a number, but I believe that for -- for a long time.

Q. In the Discussion section of the 1975 paper, which I probably ought to mark as well.

What's our next number?

COURT REPORTER: 660.

MR. SILBERFELD: Off the record.

(Discussion off the stenographic record.)

(Plaintiffs' Exhibit 660 referenced for identification.)

Q. In the Discussion section, Dr. Amit, read into the record for me, if you would, the -- the area that I've both highlighted and marked in green.

A. Here?

Q. Yes, sir.

A. "Further, data from the control groups demonstrate that the treatment is the effective ingredient in the observed reduction, not the presence or absence of motivation or the simple recording of cigarette consumption. Since all active treatment groups had equal attention and equal 'length of treatment,' and since one technique (relaxation/satiation) was demonstrably more effective in reducing the incidence smoking, the possibility of obtained effects are a function of

'attentional' factors can be ruled out."
Q. That statement truly is the opposite of your present-day point of view?
A. No, we're talking here about -- it's certainly at odds with what I think now, okay, but it's not opposite, it's not opposite, because we are talking here about attentional factors, we're not just talking about a decision, we're not talking about a cognitive process of making a decision to quit, we don't say anything here about the seriousness of making a decision to quit, we did not examine that, we did not have any evidence to do that, so it's -- it's at odds with my view today, but it is not by any stretch a diametric opposition to my view.
Q. Data from the control groups demonstrate that the -- that the treatment is the effective ingredient in the observed reduction, not the presence or absence of motivation.
A. Uh-huh.
Q. Right?
A. Uh-huh.
Q. And that's motivation by the person?
A. Uh-huh.
Q. Yes?
A. Yes, yes, yes.

Q. It's just that uh-huh doesn't mean anything when she writes it down.
A. I'm sorry.
Q. That's -- I'm not playing a game with you, it's just necessary for the record.
A. No, no, no, I'm sorry. I know, I'm fully aware of that.
Q. Okay.
A. It's -- it's by the -- by the people, yes.
Q. Let's take a break for a few minutes.
A. Sure.

(Recess from 9:41 to 9:47 a.m.)

BY MR. SILBERFELD:
Q. Dr. Amit, turning to page 6 of your report --
A. One, two, three, four, five.
Q. Here, why don't you write, like I did. From page 6 to the end --
A. Uh-huh.
Q. -- you cite 10 reasons why cigarette smoking is a very different phenomenon, from almost any perspective, when compared to more traditional dependence-producing substances; is that a fair summary of what that section is?
A. I think it's a fair summary of what -- I think it's a fair summary of what I have tried to do here.

Q. The first -- and we've talked about these some over the course of the last day so we won't spend a lot of time on this, but the first point you make is that laboratory rodents do not readily self-administer nicotine when compared to other drugs.

A. That's correct.

Q. Is that fact, if true, related to the second point, which is that in order to get animals to self-administer nicotine they have to be systematically manipulated?

A. It's related to that, yes.

Q. Okay. Why do you suppose that's true, that they have to be systematically manipulated, the animals?

A. Because the only -- I can only surmise. Rats -- and I'm not trying to be cute -- rats don't tell us what -- you know, what they -- you know, why they behave the way they behave. We can surmise on the behavior. So the best estimate of why I think that was is that nicotine doesn't have reinforcing properties similar to that that we see in the more classical dependence-producing substances.

Q. When self-administration studies are done with respect to nicotine, what is the route of administration that you're aware of?

A. Intravenous.
Q. Only?
A. No, there is a report by Glick, for example, of oral intake. I believe that that covers just about -- that the oral and the intravenous route are covered. There were some early studies to get animals to press for smoke, but that -- you know, that did not work very well, so these -- so I would say that the vast majority of the studies that worked on self-administration used either oral or intravenous route.
Q. What does nicotine taste like?
A. The report is that it doesn't taste very good, but that's all that I can say, I have never tasted it, and there are some references in some of the studies, particularly Glick's study, that did the oral route that there have been reports on, you know, that -- that taste is aversive, but -- but again, that -- that's a word, I mean it needs definition, it needs clarification, but the word that I have seen in print is that the taste is aversive.
Q. Aversive to the animal?
A. Oh, yeah, sure.
Q. What is condition taste aversion?
A. What is condition taste aversion?

Q. Yes.
A. Condition taste aversion is a paradigm where you associate in time the presentation of a novel tasting solution to an animal and associated with an injection of a chemical substance. You then wait a little while and present that novel tasting solution again, this time without the injection of a substance, and if you got condition taste aversion that means -- that is reflected in the fact that in the second time the intake of that novel tasting substance will be significantly less than it was in the first time. That is I just again for the sake of accuracy, there are many par -- many combinations of permutations of this paradigm, but this is a description of the bare essentials of this paradigm.
Q. You have done a considerable amount of work with regard to CTA, if we could use that acronym?
A. First of all, we can, and secondly, I think again without being overly arrogant, I think the answer would be yes.
Q. And in the studies that you have done, you have had to; have you not, manipulate the animals in order to get them to participate in the experiment?
A. Sure.
Q. So the manipulation of the animals in order to

get them to participate in the experiment is not a factor that you would look to as to whether or not the results of an experiment are meaningful or not?

A. No, that's not correct. That depends. That strictly depends on the study, on what you're doing. In self-administration if you manipulate the animals so that you make it more advantageous for them to behave the way you want them to behave, I think that that's not legitimate. In a study like -- like a condition taste original CTA, as you said, you have to -- for example, you have to deprive the animal of fluids for a period of time in order to see that. For that paradigm it doesn't -- it doesn't affect the -- the interpretations or the conclusions in any way, in any way, so it depends. The manipulation -- No, let me rephrase that. In any study, any laboratory study with animals involves some manipulations. The mere fact that you stick a needle into a rat's vein is a manipulation. So the mere fact that you keep the animal in a cage is a manipulation. So -- but we're talking about specific, as I said, systematic manipulations to -- to make them self-administer as opposed to other substances that don't require these manipulations.

Q. On page 6 you describe systematically

manipulating animals before any hope of demonstrating even marginal signs of willingness to self-administer nicotine. Is that a method or form of manipulation that you think skews the experiment?

A. That's correct.

Q. Why?

A. Because --

Q. And whose work are we talking about as well?

A. I'm talking about again primarily the work of Goldberg and his group and Corrigal and his group.

Q. Uh-huh. And why is it that this manipulation biases or skews the experiments results and other forms of manipulation do not?

A. For -- the simple answer or the short answer to that is it depends strictly on the manipulation. The -- so -- Well, that's my answer.

Q. Okay. Turn, if you would, to page 7, paragraph 3?

A. Now I will. Yes.

Q. It's a learned response, you --

MR. NIMS: Off the record.

(Discussion off the stenographic record.)

Q. At paragraph 3, last sentence, you say "It is noteworthy that several major reports in the literature ascribe at best weak, if any, reinforcing

properties to nicotine." Which reports is my question?

A. Goldberg.

Q. Any others?

A. Henningfield.

Q. Any others?

A. Barrett.

Q. Any others, that you can think of today?

A. No, I mean I would stay with that.

Q. All right. Let me refer you to paragraph 4a.

A. 4a, yes.

Q. Why is there a 4a?

A. Just because I wrote it and then said, "Oh." As I -- as of this I had another idea that I thought was tied to the previous point so to kind of systematize the fact that the next point is really tied to this and I haven't shifted to something else I just called it "a" or -- so in my humble system if there is a -- a letter notation that's a way of saying that in my eyes it's tied to the previous, you know, there is some connection to the previous point.

Q. Okay. Here you say again in substance that "nicotine withdrawal symptoms," in quotes, are really psychological dependence, not physical?

A. That's correct.

Q. Okay. Are you familiar with any studies, scientific studies, that describe physical withdrawal symptoms other than the changing pulse that we spoke about earlier?

A. Yes.

Q. Are you aware of any of them?

A. Yes.

Q. What are they?

A. I have alluded to them in -- in number 4, and this is there is a study, I think one or two papers by Mallin, and -- and his associates, in animals showing -- arguing that they have observed withdrawal symptoms in their animals after administration of nicotine.

Q. Why are the studies of Mallin questionable?

A. Because the withdrawal symptoms that they are reporting on are very different than the ones that we see with the more -- to use the expression that we have used here, "the most classically dependent", physical dependence-producing drugs or substances, and in my opinion do not rate or do not justify the arguments that they are -- that they are withdrawal symptoms.

Q. Are you aware of any clinical studies that describe physical withdrawal symptoms?

A. There is a -- there is a paper by Hughes that describes -- again Hughes plus, that describes in humans withdrawal symptoms. I am not aware of anything that I would consider to be physical signs of -- of withdrawal on the same dimension as what we see with alcohol, cocaine, opiates, and so on.

Q. Well, that would be a matter of degree; right?

A. No, it's not a matter of degree, it's a matter of what kind of symptoms do we see. It's possible that -- that changes in pulse occur with alcohol, cocaine and opiates, but we don't even list them as major -- I mean as such as symptoms because they are such major, you know, effects, that -- so it's not just a matter of degree, it's a matter that symptoms that -- as I said, that to me are symptoms of peripheral nervous system activation as a result of tension and moti -- you know, emotion, stress and all this, these to me are not real withdrawal symptoms, because they will occur in individuals in response to a number of environmental situations that have nothing to do with the intake of chemical substances.

Q. What physical signs and symptoms of tobacco withdrawal did Hughes describe?

A. I think he described also the -- the pulse rates. I believe that he described, and again I'm

not -- I'm not 100 percent sure, I think he discussed some changes in blood pressure. I'm not aware -- I don't remember that he described anything else. He again described nervousness and restlessness and things like that, but I'm -- I -- the ones that I'm aware of I think is -- is changes in pulse and -- and I think blood pressure, but again, I'm not -- I'm not -- I'm not prepared to -- to state that categorically.

Q. Do you subscribe to the conclusion that Hughes reached about the withdrawal symptoms from nicotine in cigarettes?

A. No.

Q. Why?

A. Because what he considers a satisfactory set of symptoms to qualify as withdrawal symptoms are not the set of symptoms that I consider to be -- to be satisfactory. I would -- for me for something to be satisfactory they will have to have a set of withdrawal symptoms that are similar to the drugs or the chemical substances that I've already mentioned before.

Q. To the extent that smokers report disruptions in sleep patterns when they attempt to quit or when they have quit --

A. That's right, yes.
Q. -- do you regard that as psychological or physical in nature?
A. No.
Q. Neither one?
A. Sleep pat -- disturbances in sleep pattern?
Q. Yes, sir.
A. Yes -- no.
Q. Is that physical or psychological or both?
A. No, no, it's psychological.
Q. That is my question.
A. Okay. No, I consider that a reaction to stress. It's a psychological, it's a -- to my mind it is a very typical psychological reaction, not -- certainly not a -- a physical reaction, but a psychological reaction. I -- last night after I -- my conversation with my wife I had some difficulties falling asleep. I was not having withdrawal, and yet I had some difficulties falling asleep. Falling -- I mean sleep disturbances are one of the most commonly-observed symptoms of -- of stress and tension and -- and such like things.
Q. Speaking of stress, is there both a physical and a psychological component to stress, or is it all psychological?

A. Stress will result in measurable physical changes in a very specific set of systems, primarily the system related to peripheral nervous system activity, so it will -- we can measure it physically, but the phenomenon of stress is perceived as a psychological phenomenon.

Q. In paragraph 4a in the second to the last sentence referring to, quote, "nicotine withdrawal symptoms," close quote, you say "They are certainly less severe," pardon me, "than the reactions observed among gamblers when deprived of the opportunity to gamble. Moreover, even those 'symptoms' tend to disappear within a few days."

A. Yes.

Q. What is the basis of the statement that withdrawal symptoms, however mild or severe they may be, disappear in smokers within a few days?

A. The -- the main basis for that is my experience with people that quit smoking. This is not a rare phenomenon. We see that and observe them. I myself was a smoker some years ago. Just about -- just about everybody in my family smoked at one point or another. But -- and I have observed, you know, in my -- during the years of my work in -- in the clinic I have observed many people, not only in the form of a

study or anything like that, but people that informed me that they quit smoking and so on, I think that what it characterizes is yeah, that after a few days, and we may debate what do we mean by a few days, but after a few days these symptoms disappear.

Q. Would you disagree with the statement that the symptoms of withdrawal in cigarette smoking persist for months?

A. Yes, I would disagree with that statement.

Q. Are you familiar with Hughes' paper on that subject?

A. I am not familiar with any statement that Hughes makes that the withdrawal symptoms persist for months; no, I am not familiar with that.

Q. Assuming he made that statement, you would disagree with it?

A. I would disagree with him, --

Q. He is wrong?

A. -- that that is a wide-ranging phenomenon, yes.

Q. In terms of your personal smoking habit, when did you smoke?

A. I think it would be more accurate to ask me when did I quit smoking because I smoked for many years. I quit smoking about nine years ago.

Q. And you smoked for how many years?

A. Well technically speaking before that, there was another -- I smoked from about the time that I was 17 to the time that I was 34, and then quit for about 6 years or so, roughly speaking, and then in 1973 I joined the war in Israel and during the -- the -- what is called now the Yom Kippur war, and by the time the war was over I was smoking again, and -- and then smoked until about nine years ago, so it's many years. I mean I can try to do the calculation, --

Q. Yeah.

A. -- but it's many years that I have smoked and now it's a significant number of years that I don't.

Q. What were the conditions or the reasons that you started smoking again when you were in Israel? Stress of the war? Everybody around me was smoking? What?

A. Both of the above.

Q. And when you quit the first time at age 34, how did you quit?

A. Just quit.

Q. Okay. No help of any kind?

A. No help of any kind.

Q. Suffer any symptoms of withdrawal?

A. I was nervous for the first few days.

Q. And that was it?

A. Yeah.
Q. From 17 to 34 how much did you smoke?
A. Pack a day.
Q. Pack a day. And then after -- after your experience in the war you smoked until roughly 1988 or thereabouts?
A. Yes, something like that.
Q. So about another fifteen-year period?
A. Uh-huh.
Q. Yes?
A. Yes.
Q. And --
THE WITNESS: I won't learn.
Q. And how much did you smoke in that second period?
A. Again about a pack a day. Maybe even less. But for all intents and purposes, probably a pack a day.
Q. And when you quit the second time, how did you do it?
A. Just quit.
Q. Why?
A. Because it was affecting my vocal cords. I was getting -- I had -- it was making me hoarse, and in my profession it's kind of hard to operate without your vocal cords, I mean without good use of your

vocal cords, so I decided I'm going to quit.

Q. By my rough calculation of years, that would mean that you were a smoker at the time you wrote "Stop Smoking for Good"; is that right?

A. Yeah, I think so. I think -- yeah, -- I think so.

Q. And you were a smoker when you were helping people or attempting to help people to quit?

A. That's right.

Q. At The New Clinic?

A. Yes. I think so, yes.

Q. Did you ever apply the methods of either The New Clinic program or the book to yourself?

A. No.

Q. Why?

A. Because I did not want to quit at the time. I -- I was fully convinced that, you know, on the basis of one experience that I -- that I had and -- that if I would want to quit I will quit. I didn't want to, and I therefore didn't feel that I should apply to myself any procedure that required that simply because I didn't want to quit.

Q. When you quit at age 34, why did you quit?

A. I -- the best -- I can't recall really why I decided to quit. The best that I recall was a dare

from in fact one of my colleagues, another graduate student whose office was right near me and he kind of dismissed me as this addict, quote-unquote, who can't, and I said, "Oh, yes, I can," and it was some kind of a dare and I -- whether there was some, you know, supportive reasons I at this point don't remember, but I clearly remember my friend, Michael Corcoran, saying to me "You're not going to be able to quit," and I said, "Well we'll see," and I quit the next day.

Q. Is your own personal experience with cigarettes, your ability to quit on two occasions, seemingly for a long time, a factor in your thinking about smokers generally and their ability to quit?

A. I'm sure that it plays a role. I would be -- I would be disingenuous -- disingenuous and -- and if I don't say sure. To what extent? Is it playing a definitive role? No. I think because I've mentioned on more than one occasion that I think that the whole phenomena is very variable, very variable, and therefore my experience is an experience, so it accounts for an N of 1, maybe an N of 2, because I tried to quit twice, so it does play a role, of course, but I don't believe that that is definitive, I -- in my thinking, in formulating my thinking I

don't believe that I relied heavily on -- on my personal experience.

Q. When you began smoking at age 17 how long did it take you to get up to smoking a pack a day?

A. Once again, I would be less than truthful if I would say that I remember exactly.

Q. Give me a range.

A. Very quickly, I -- my suspicion, within weeks.

Q. And how about when you started again in Israel, how long did it take you to get up to a pack a day? A day?

A. Days. Days.

Q. Okay. If you turn over to page 8 at the bottom, paragraph 7, there's a sentence that begins, "Thus, basic requisites such as dose-response relationship, inhibition of effects with antagonists and their maintenance with agonists easily observable with cocaine or opiates are not easily observed with nicotine." What is the basis for that statement?

A. Corrigal.

Q. Anything else?

A. Clark. Again plus.

Q. Sure.

A. Every time it's plus.

Q. I --

A. Very few people work by themselves these days.
Q. I do.
MR. McDONNELL: I can understand that.
THE WITNESS: Far be it from me to make comments on lawyers.
Q. Further down in that paragraph, Dr. Amit, you say, "...the relative failure of nicotine agonists in the form of nicotine containing gum or the nicotine patch to effectively block cigarette smoking." What is the basis of that statement?
A. I would say that a statement, one statement by Benowitz accounts for all of -- or can account for all of it, who said we have to contend that the success of the efficacy of nicotine replacement has been less than spectacular, although I'm not sure that I'm quoting it by -- you know, on the word, but that was less, you know, and -- and that does not make any sense in terms of the neuroscience of "nicotine dependence," quote-unquote.
Q. Is the ability of a substance to produce discriminative stimulus effect one characteristic of an addictive substance?
A. Not at all. Not at all. There are many, many substances that will produce drug discrimination or substance discrimination that are not taken by any

humans or animals. Scopolamine is a drug that produces very clear drug discrimination. I don't know of any illicit use of scopolamine, for example, I mean as an example. There are many substances that produce drug discrimination, but they're not taken in by -- by animals or humans.

Q. Paragraph 8 on page 9 is really all about drug discrimination procedures; right?

A. Uh-huh.

Q. Yes?

A. Yes.

Q. And you say that the attempt to demonstrate that animals can also discriminate nicotine from other substances was not nearly so successful. What paper or papers are you thinking of?

A. Once again Corrigal. Corrigal had done a study on -- on drug discrimination --

Q. Uh-huh.

A. -- and tried to see whether -- I mean he really -- he did get an effect when -- when he asked the animals, "asked," quote-unquote, to discriminate nicotine from saline, but it was -- it was a weak effect, and -- and as I mention here further down, I think that even Corrigal was puzzled by the fact that it's not mediated by the same dopaminergic substrate

that mediated discrimination of cocaine and other drugs.

Q. In order to come to this particular opinion about the effect or impact of drug discrimination studies, did you do any literature search to see what others had thought about the ability of animals to discriminate nicotine from other substances? Did you do that? is the question.

A. Yes. Yes.

Q. And what did you look at?

A. I looked at Stolerman's work. I looked --

Q. Stolman?

A. Stoler -- Stolerman.

Q. S-t-o-l?

A. S-t-o-l-e-r-m-a-n.

Q. Uh-huh.

A. I looked at Kumar's work, K-u-m-a-r. I believe it's C -- no, no, K-u -- K-u-m-a-r.

Q. They in fact publish together; did they not?

A. Some together and some separately.

Q. Okay. Who else?

A. Some together and some separately. Well, I've looked at -- at Corrigal.

Q. Yes, you mentioned that.

A. As I mentioned. I've looked at -- no, that's --

for nicotine specifically.

Q. Yes.

A. Right now I will stay with that.

Q. Did you look at the work of Takada, Swedberg, Goldberg, and Katz?

A. Yes, I believe I did.

Q. Did you look at the work that Stolerman did with Pratt?

A. Yes, I believe I did, yes.

Q. Did you look at the work Stolerman did with Goldberg and Risner?

A. I think so, but I don't want to say definitively.

Q. Did you work at the work of Chance Mervin, et al?

A. No.

Q. All of those studies, at least the ones that you looked at, found that animals identify nicotine as having a highly specific discriminative stimulus profile; isn't that true?

A. No. I think that that's a very strong statement that I think is not warranted by the data. I think that yes, all of these studies were able to show that animals can discriminate nicotine from saline. That is consistent and -- and not debateable. Whether

it's, you know, the -- I won't repeat the terminology that you use, but I don't believe that -- that -- because the effect is not nearly as strong as you see with other drugs, so I will not use strong terminology, but I will not debate the fact, as I said, that yes, you do get discrimination between nicotine and saline.

Q. Paragraph 9 is about tolerance, right?

A. Yes.

Q. And your view is that a close scrutiny of the acquisition of smoking behavior in humans reveals a rapid and sharp rise in the initial learning curve reaching quickly a steady asymptote?

A. That is correct.

Q. Where no further incremental changes occur?

A. That is correct.

Q. What is an asymptote?

A. There's no -- there's no blackboard here. An asymptote is the -- when you have a -- a behavior curve, I mean we plot behavior, particularly behavior that is not being learned, okay. What we see is first of all a rise in the curve and then at a certain point the curve -- excuse me -- the curve flattens, okay, and therefore there is no significant -- I mean it's never a really kind of geometric

flattening of the curve, but it flattens, we don't see any more significant changes in the curve and it continues like that for some period of time, we say that the curve has reached an asymptote or a plateau, I think that that -- that this will be a plateau.

Q. A steady state?

A. No, steady state is a different thing. Okay. Steady state's a different thing. I would say a plateau.

Q. All right. So a plateauing effect is what --

A. Yes.

Q. -- asymptote is referring to?

A. Yes.

Q. And comparing cigarettes to other substances such as cocaine, marijuana, heroin, morphine, barbiturates, do they also reach an asymptote in use?

A. Yes, they do reach an asymptote, but the -- the total curve is very different than what we see in nicotine.

Q. And when you say there is -- is a rapid and sharp rise reaching quickly a steady asymptote, what's the time period from first --

A. Weeks. In my opinion, weeks.

Q. And what is it for cocaine?

A. For cocaine?

Q. Yes. Based on the literature.
A. At least months. I -- my temptation was to say years. We still see increments, you know. Years. Now there are again, to be -- to be precise and to be accurate we have to introduce other factors, and this is the cost. Okay. The cost of the substance is a major factor in the shape of the curve. So in fact nico -- cocaine is considerably more expensive than cigarettes per daily use, okay, per daily dose, and therefore it will have an effect on the curve. In fact it should tend to produce a shift to the left in the curve.
Q. Meaning what?
I can't -- I can't let you have that one.
(Handing note paper.)
A. Okay.
Q. You're about to describe something in written form to us.
A. Say this is a -- a typical form of a drug X, okay. A rise in the curve and then an asymptote.
Q. Yes.
A. All right. A shift to the left will be -- will be something like that. That will be a shift to the left.
Q. So the left --

A. Where the -- the -- the rise is faster and produces -- and therefore the point of turning to the asymptote occurs faster, because the cost, as I said, in cocaine, which is what I'm proposing, one would assume should happen because of the cost. Despite that -- despite that, we don't see that. Right. We see in fact a shift to the right, compared to say nicotine; in other words, where it's -- it's kind of -- and we have to change the -- the abscissa because we are shifting now from weeks to -- to months and to years, but we get a major shift to the right.

Q. Page 10 of the report. This is the -- in that paragraph, at paragraph 10 you say almost all drugs which support their own compulsive and repetitive use share three additional properties in common: euphoria, intoxication, and adverse societal effects; right?

A. Uh-huh.

Q. Yes?

A. Yes.

Q. Are those three additional criteria necessary in order to determine whether any substance is dependence-producing, in your view?

A. Not strictly speaking, no. Not strictly speaking, no.

Q. So this is more informational than it is a matter of criteria?
A. More informational, and -- but as a matter of fact, it -- very often you see that, but it is -- in terms of the definition that I presented to you, no, it's not -- it's not absolutely necessary, no.
Q. You say further down, "While no demonstration of euphoria was ever reported for nicotine in humans," and then the sentence goes on to talk about improvements in performance.
A. Uh-huh, uh-huh, yes.
Q. You have seen no report anywhere of euphoria for nicotine in humans as a result --
A. I have seen no reports anywhere that I know of within the bounds of my reading of the literature that reported euphoria with regards to nicotine usage in humans.
Q. At the bottom of page 10 there are two conclusions about your review of I take it the tobacco industry documents?
A. Those that I've read.
Q. Yes, sir.
A. Yes.
Q. That's what those two points at the bottom of page 10 refer to; is that right?

(Witness reviewing document.)

A. Yes.

Q. You wrote a paper, which I'll mark as next in order, 661, in 1982 entitled "Progressive Relaxation Exercise and Human Gastric Acid" Output. Do you recall that paper?

(Plaintiffs' Exhibit 661 referenced for identification.)

A. Yes.

Q. Let me show it to you. What was the hypothesis being proposed or tested there?

A. The truth is that really the -- the main item in that study was really to try to test a telemetric procedure which at that time was quite new and not used very often and now it's used fairly -- fairly regularly, so that was really the main item of curiosity for me. The -- the working hypothesis of the study was that stress in individuals produces an increase in gastric acid output and that using the relaxation procedure will affect and will block the gastric acid output.

Q. And what did you find?

A. The affect was small. I mean we did see some effect, but the effect was small. I will have to read this paper because I have not gone back to it

now 15 years, but I think that what we got is a small effect.

Q. Just let me show you the last page, the last paragraph, and in fact just the last line, but what does it say?

A. The data suggests that relaxation training is not an effective method of lowering acid output of healthy subjects.

Q. That's the bottom line to that paper, isn't it?

A. I said I mean the effect was small.

Q. All right.

A. I mean again by way of background, the coauthor here, her husband is one of the chief surgeons in Montreal doing ulcer surgery, and of course she had a particular interest in -- in gastric output, gastric acid output, and yeah, in terms of meaningfulness of that treatment to alleviate say surgery and all this, it was not effective at all.

Q. Okay. Let me marked as 662 a document entitled "Research Advances in Alcohol and Drug Problems".

(Plaintiffs' Exhibit 662 referenced for identification.)

Q. Do you recognize this, sir?

A. I will have to look at it.

Q. Please do.

(Witness reviewing document.)

A. Yes, yes.

Q. You contributed I think a chapter; did you not?

A. It would appear that way.

Q. Well what was this document? Was it a text?

A. It was a book, yes.

Q. Or --

A. It was a booked that was published by Plenum -- Plenum Press, and edited, as you see, by a large number of people, all of them heralding from the Addiction Research Foundation in Toronto.

Q. What is the Addiction Research Foundation in Toronto?

A. The Addiction Research Foundation in Toronto is a Ontario -- a provincial government agency, we don't have states, we have provinces, and Ontario has a provincial agency called the Addiction Research Foundation which its mandate is both to provide help, assistance, therapy, and things like that to any drug use, and also to do research on the issues related to what they, quote-unquote, erroneously call "drug addiction".

Q. Erroneous or not, they invited you to participate in this book by providing a chapter?

A. That's correct.

Q. About an area of interest that you had?
A. That's correct.
Q. And that was about ACTH?
A. No, it's about acetaldehyde.
Q. Oh, I'm sorry, acetaldehyde. Have you ever talked with the people at the Addiction Research Foundation and asked them to change their name?
A. Yes.
Q. You have?
A. Yes.
Q. And what'd they say?
A. They laughed.
Q. And this was work done --
A. Again, in fairness, I mean this was in -- in kibitz, I didn't seriously think that they were going to do that, but I told them that I think they ought to do that.
Q. Well kibitz is a technical term many in the room won't understand, but I do.
A. Okay.
Q. This was work done a round 1990?
A. It was published in 1990. It began -- I mean the work -- my work on acetaldehyde had began earlier than that and continues to the present day, but at a certain point we have summarized some of our

knowledge and notions about acetaldehyde and then published it in this chapter in 1990.

Q. Chapter 10 was a chapter not written by you that had to do with the effects of tobacco. Do you see that?

A. Yes.

Q. Did you review that chapter?

A. No.

Q. Did you ever read it at all?

A. Yes, that's -- I believe that that's a chapter by Hughes. I believe that that's a chapter by Hughes and -- yeah -- well, I'm sorry. I should have just looked at -- at -- yes, I am familiar -- I can't tell you that I read every word of that chapter, but I have read significant parts of this chapter, yes.

Q. And in summary fashion can you tell me whether you'd agree or disagree with the conclusions reached in that chapter?

A. Specifically in -- in the section in section 18 or in general?

Q. In general.

A. There are some things that I -- I very much agree with -- with Hughes, there are some things that I don't.

Q. Can you tell me sitting here without having the

benefit of the chapter in front of you what you disagree with?

A. I disagree with the -- the comparison of -- of -- the abstinence symptoms relative to other drugs, although again to my recollection they classify abstinence in nicotine, but I don't think that they make the claim that it is really comparable to -- to other drugs.

Q. I want to talk with you now about a variety of topics, and I'm going to be shifting topics, but I will tell you when I shift. Okay?

A. I will try to adjust myself.

Q. Are you familiar with the role that adjustments in pH may play with respect to nicotine in cigarettes?

A. No. I know of -- of that phenomenon, but I am not -- I am not familiar with it and I am not -- this is not my area of expertise, so no.

Q. And you've formed no opinions about it?

A. No, I don't have any opinion about that.

Q. And you expect not to express any opinions about that at the time of trial?

A. I absolutely intend not to express any opinion about that. I will try judiciously not to express any opinion about areas that I don't consider myself

an expert in.

Q. How about the effect of ammonia in cigarette products?

A. The same.

Q. You're familiar with it in a general sense?

A. I've heard, you know, that it's been used but I am not prepared to comment about what does it mean, what are the results, or anything like that.

Q. Do you have an understanding of the term up regulation?

A. Of what? If you're -- of what?

Q. Nicotinic receptors.

A. Yes.

Q. Define that term for me.

A. Up regulation means that with the exposure, I mean, and I will just state that not only with regard to nicotine receptors, but as the concept, that's why I said if you are talking about receptors, what we see is that with the -- with exposure to a chemical substance, a psychoactive substance, a substance that has an effect on the central nervous system, although technically you could see the same thing or you should be able to see the same thing in the peripheral nervous system, but most of that work has been done with central nervous system, you see an

increase in the number of receptors and/or in the binding capacity of the receptors. There is a debate. Some people say that one occurs, meaning the increase in the number of receptors; some people that it's the binding capacity of the receptors that increases, and some people say that both of these things occur. But when this phenomenon occurs, we say that what we are seeing here is an up regulation of the receptor system that is related to that substance that has been now applied to that organism.

Q. Do you consider yourself an expert in pharmacodynamics?

A. No. No.

Q. And define that term for me.

A. Pharmacodynamics looks specifically at the dynamic relationship of a substance with the tissue to which you apply it, meaning if you -- just as an example -- just as examples of it, if you apply a chemical substance to a tissue, the study that looks, for example, at the distribution of that substance in the tissue across time, for example, will be a pharmacodynamic study. The -- the elimination of that substance from the tissue will be -- and the time course that that -- that happens will be also pharmacodynamics.

Q. We've talked a little bit about relapse statistics for cigarettes. Are you familiar with the relapse statistics for alcohol over time, moaning more than just a three-month follow up, a year or more?

A. Yes.

Q. And what are they, current day?

A. Best estimate that I can give you at this point is that people that quit drinking, about 80 percent of them relapse. Roughly speaking about 80 percent of them relapse, within -- if talking about the time frame of what, a year.

Q. Yes. Does that relapse factor for alcohol suggest to you anything about the level or amount of that dependence that people have on alcohol?

A. No, I -- no, I -- I don't -- I don't look at that that way. I have never looked at dependence as a function of failure to adhere to a certain discipline, meaning, you know, self -- self-discipline. No, I don't see that, not in alcohol and not in -- in other substances, that that really teaches us something about the nature of dependence.

Q. You believe it teaches -- doesn't teach us anything about the nature of dependence?

A. No.
Q. Is that right?
A. That's correct.
Q. And that would be true of cocaine as well?
A. That will be true about cocaine as well.
Q. The amphetamines?
A. Amphetamines.
Q. Morphine?
A. Morphine as well.
Q. Morphine or heroin?
A. Yeah, morphine and heroin are the same thing. I mean for all intents and purposes morphine and heroin are the same thing.
Q. Returning to the role of pH, have you seen any tobacco industry documents that document or evidence the adjustment of nicotine in cigarettes?
A. The adjustment?
Q. Yes, lowering or raising of nicotine in relation to the type of cigarette product being produced.
A. Yes, I have seen documents like that, yes.
Q. Generally those are the documents that relate to an attempt to lower tar in a cigarette?
A. I've seen all kinds of things, you know, lower this, raise this, but the point, the truth is, that as soon as I established, you know, by just scanning

the paper that it is not related to dependence and/or, quote-unquote, "addiction," I basically put it on the -- you know, in the next pile.

Q. Do you consider yourself expert in the actions and differences, if any, between free nicotine and bound nicotine?

A. No.

Q. How about nicotine absorption?

A. No.

Q. Blood levels of nicotine?

A. You will have to elaborate on that.

Q. Just in a general sense.

A. No.

Q. Let's begin talking about some of the documents you looked at, by starting with the Brown & Williamson and B.A.T. set. What I have here is a subset, as I understand it, of all the documents you were shown.

A. Before we go into this can we take just a two-minute break --

Q. Of course.

A. -- to visit the --

Q. Facilities.

A. -- facilities.

Q. Absolutely. Off the record.

(Recess from 10:44 to 10:51 a.m.)

BY MR. SILBERFELD:

Q. Dr. Amit, I want to talk to you about a few of the Brown & Williamson or BATCO documents you've looked at.

A. Yes.

Q. I hope you've looked at these and it's been represented to me that you have, but starting with a document entitled "APPRAISAL OF REPORTS IN PROJECT HIPPO," do you recall seeing documents about Project Hippo?

A. Yes.

Q. Let me show you what I've marked as 663.

(Plaintiffs' Exhibit 663 referenced for identification.)

A. Oh.

Q. In a general sense, the first question is: Is this a document you looked at?

A. I believe so. I believe so. I can barely read it, so -- but I believe so. I believe that I -- I have looked at that, yeah.

Q. And when you read it was it your custom and practice to read it fully and completely --

A. Yes.

Q. -- to the extent possible?

A. Yes, there are many -- there are many documents where I couldn't read it and all sections of it, and so -- but to the extent that I could I tried to read even those that I determined not to be in -- in my area of interest or my area of expertise I tried to read them, to use them fully and completely to the extent that I could, yes.

Q. And in so doing, did you compare whatever scientific conclusions were presented in the papers with what you understood to be known in the medical and scientific literature as you understood it?

A. Only if it met, yes -- only if it meant -- met the criteria that I imposed on my exercise, meaning that I see in the paper evidence of research and data-driven material and conclusions that represent a breakthrough in our understanding of dependence, then I try to, you know. But as you know, with the exception, I've stated it already I think in the record, that I did not find -- with the exception of one set that we discussed yesterday, I did not find any.

Q. That was the Denoble paper?

A. That's correct.

Q. In order for you to evaluate the documents as to whether they were appropriate research papers, did

they have to be of publishable quality as far as you were concerned?

A. No, they didn't. They had to first of all, present data --

Q. Right.

A. -- and present a formal study. And a -- some -- some evaluation of -- of the data in that -- in that area of research. Whether they are -- I would have considered them absolutely at publishable quality I don't think was -- was a major consideration in my -- in my attempt.

Q. And when documents such as Exhibit 663 summarized other research did you at any time ask for the original research materials to be shown to you?

A. Again, only in one instance that we already discussed.

Q. Well that was an instance in which Denoble's work was a research paper that was part of the documents.

A. That's correct.

Q. And you were furnished, I take it, as we discussed yesterday, some additional materials about Denoble?

A. Yes.

Q. Putting that example aside, this Exhibit, 663,

describes research undertaken as part of Hippo I, right?

A. I believe so, yes.

Q. My question is: Did you ever ask counsel to provide you the original research materials of Hippo I --

A. No.

Q. -- rather than the summary that's exemplified by 663?

A. No.

MR. GALE: Counsel, if I can interject one thing to the extent it matters.

MR. SILBERFELD: No.

MR. GALE: Okay.

MR. SILBERFELD: Yes, you can.

MR. GALE: He got the original research from Hippo I, it's not in that stack because it's among the documents that you all from the depository. Just so that -- I just wanted you to understand.

MR. SILBERFELD: Thank you.

(Plaintiffs' Exhibit 664 referenced for identification.)

BY MR. SILBERFELD:

Q. I've marked as 664 a document entitled "The

Study of Human Smoking Behavior Using Butt Analysis", Report Number RD.1608 Restricted, from the British American Tobacco Company. Is that a document you looked at?

A. I believe so.

Q. Okay. Is it a research paper which presents data, as you've defined those terms for us?

A. Yes.

Q. And did you make a comparison with respect to Exhibit 664 whether or not that provided anything new or significant to the world's understanding of the effects of nicotine in cigarettes?

A. That was not part of my -- of my frame of reference. Remember, I was only -- it's not -- I was not studying the effects of nicotine in cigarettes. I was studying whether there was any -- I was looking and searching to see whether there is anything to do with dependence and/or, quote-unquote, "addiction" that was in the documents that was not reported to the public and that they -- they -- therefore research and data generated by the industry that was not known to the public. This doesn't fit that criterion.

Q. So you would say that Exhibit 664 has nothing to do with dependence?

A. That's -- it does not represent data on -- on the -- that studied the issue of dependence, no.
Q. So do I understand you correctly to say that in doing the document review that you did you focused exclusively on dependence or addiction if that term appeared --
A. Yes, that's correct. I've stated that I think throughout our conversations.
Q. And nothing else, such as smoking behavior patterns?
A. Yeah, I mean no -- I mean the answer is yes, I did not concern myself with smoking behavior patterns, all right. If there was something in the study on smoking behavior patterns that was related and relevant to our understanding or marked a breakthrough in our understanding about dependence or addiction then it would have been then a -- something that I would have studied, but -- or considered, but this was not the case here.
Q. With respect to Exhibit 664?
A. To this particular document, yes.
Q. Let me mark as 665 another document entitled "COMPENSATION: A REVIEW, THE RELATIONSHIP BETWEEN COMPENSATION AND CHANGES IN CIGARETTE DESIGN".
(Plaintiffs' Exhibit 665 referenced for

identification.)

Q. Is this a document you looked at?

A. I believe so.

Q. Was it a document that you studied carefully? By that I mean did it have to do with dependence?

A. No. No.

Q. To the extent that smokers compensate in order to try to achieve the same nicotine dose to which their bodies might be used to or accustomed, is that a factor in dependence?

A. It may be a factor in dependence, but I mean somebody will need to show how is it a factor in dependence. Just because somebody compensates for something it doesn't mean that we can immediately assume therefore that it's a factor in dependence.

Q. Would you regard that as an open question at this time; that is, whether compensating behavior plays a role in dependence, in cigarettes?

A. Yes, it's an open question. Yes. We may not mean the same by -- by that answer, but yes, I would.

Q. What do you mean by it?

A. I mean by it that yes, it is possible that somebody is going to come tomorrow and show us how the development of dependence is really the major factor that determines compensation of people in --

or animals for that matter in their usage. So in that sense an open question. It hasn't been demonstrated before.

Q. Was Exhibit 665 a research paper which presented data?

(Witness reviewing document.)

A. Yes.

Q. But again you didn't compare it to the scientific literature and it didn't bear on dependence?

A. That is correct.

Q. All right. Let me show you Exhibit 666 which is a document entitled "EFFECTS OF NICOTINE ON ELECTROCORTICAL ACTIVITY AND ACETYLCHOLINE RELEASE FROM THE CEREBRAL CORTEX OF THE SQUIRREL MONKEY". Is that a document you looked at in this case?

(Plaintiffs' Exhibit 666 referenced for identification.)

A. I believe so.

Q. And did it bear on the issue of dependence?

A. No.

Q. Did it present data?

(Witness reviewing document.)

A. Not in my concept of presenting data. I mean they're not presenting a study. They are reviewing,

you know, some -- some work that have been done by a number of people. It is not -- but -- and there is data mentioned here, --

Q. Yes.

A. -- but they're not reporting a formal study with a formal hypothesis that they are studying. That's just by perusing it at -- at this point. Regardless of that, it is certainly not data that is in any way relevant to the question of dependence or -- or, quote-unquote, "addiction".

Q. Okay. Do you believe that this paper when you reviewed it, Exhibit 666, provided any new information about electrocortical activity of nicotine, as of the year that the work was done, but I can't tell you what year that is?

A. I can't -- again I am not competent to -- EEG is not -- again is not my field, it's a very -- it's a specialty area, and I am not in a position to -- to -- I don't know the literature on -- on EEG altogether, and -- and so I'm not in a position to say whether that data represents anything new or significant.

Q. Okay. Let me mark as 667 the paper entitled "EFFECTS OF NICOTINE ON THE CENTRAL NERVOUS SYSTEM," January 1971. Is this a document you looked at,

Doctor?

(Plaintiffs' Exhibit 667 referenced for identification.)

(Witness reviewing document.)

A. Yes, I believe so.

Q. Did it provide data?

A. No. Sorry. It did not provide data related to the question of dependence or addiction.

Q. It provided data about the effects of nicotine on the central nervous system?

A. Yes, it provides data on the -- on the release of acetylcholine and effects, you know, and also provides some data, I believe, on the effects of nicotine on EEG.

Q. All right. But nothing about dependence?

A. No.

Q. So you would have no opinion as to whether or not this document --

A. No.

Q. -- provided a scientific advance on what was known?

A. No.

Q. That's true?

A. Yeah, that -- I mean, I will not, and -- and I certainly was not in a position and -- and didn't

offer to do a -- just a general assessment of the quality of research that was done by people related to the tobacco industry in -- in terms of the quality of their research. I have restricted myself to my area of expertise.

(Plaintiff's Exhibit 668 referenced for identification.)

Q. 668 is a document entitled "HUMAN SMOKING STUDIES, ACUTE EFFECT OF CIGARETTE SMOKE ON BRAIN WAVE ALPHA RHYTHM," October 31, 1974, from Brown & Williamson. Did you review that document?

A. From the -- even from the title I see, yes, I think I did. Yes, I think I did.

Q. And did that paper present data?

A. No. I mean present data, I'm sorry. Yes, it presents data.

Q. About the brain wave activity of smokers?

A. That's correct. Alpha particularly.

Q. Alpha brain wave?

A. Yeah.

Q. And what is your understanding as to the relationship of alpha brain waves to mood in human beings?

A. Again, I would like not to answer that because it's not my area of expertise. I do know some things

about what commonly behavior scientists know about alpha rhythm, you know, but I would like not to answer it as an expert.

Q. Okay. This document provides; does it not, new information about alpha brain waves?

A. It's possible. I'm really not -- my knowledge of that literature is nil. I mean it's close to nil. Maybe I know about alpha really more than the lawyers that are sitting here, but that's really not saying much, so I'm not -- I am not -- I don't feel comfortable in saying it really presents something new and something significant. I am not in a position to do that.

Q. Well as of the time this was written in 1974 under CONCLUSIONS AND RECOMMENDATIONS they say, "Further studies of this striking, fundamental human response to cigarette smoke are indicated." In 197 -- as of 1974 did you have a view whether the alpha brain wave activity that was described there was a striking phenomenon?

A. No.

Q. You don't know one way or the other?

A. No.

Q. Let me mark as 669 a document entitled "RESEARCH CONFERENCE UNITED KINGDOM 1984". Have you seen that

document before, Doctor.

(Plaintiffs' Exhibit 669 referenced for identification.)

(Witness reviewing document.)

A. I believe so.

Q. Turn, if you would, to the tab I've put there. That describes; does it not, a 1984 conference in South Hampton on nicotine?

A. That's correct.

Q. Did you read that when you --

A. I believe so.

Q. -- when you reviewed the document?

A. I believe so.

Q. Okay. Do you have any reason to disagree with the major conclusions reached?

A. Once again, -- let me just --

(Witness reviewing document.)

A. No. I -- none of this is really relevant to -- to my area besides that this is not data, this is discussion and conclusions about material that was presented in a conference. I don't see any -- any -- again data -- certainly there is no data here on -- on the issue of dependence and/or, quote-unquote, "addiction", so no.

Q. Okay. Do you agree with the statement that

"satisfaction," in quotes, must be related to nicotine?

A. No, I don't agree with that statement. I'm not even sure that I understand what the statement means.

Q. Do you agree with the statement many people believe it is a whole body response and involves the action of nicotine in the brain, referring to satisfaction?

A. No, I don't -- again, I don't understand what a whole body response means.

Q. Are you familiar with the term "impact on inhaling"?

A. Yeah, I'm familiar with the term, yes.

Q. Let me show you as Exhibit 670 a document entitled "METHOD FOR NICOTINE AND COTININE IN BLOOD AND URINE" dated 1980. Is this a document you reviewed?

(Plaintiffs' Exhibit 670 referenced for identification.)

(Witness reviewing document.)

A. I believe so.

Q. And was there anything meaningful in it in terms of dependence?

(Witness reviewing document.)

A. No.

Q. Does it present data, even though it's not about dependence?
A. It presents some data, yes.
Q. But again you didn't evaluate whether that made a contribution to science?
A. To science in general, no.
Q. 671 is a document entitled "SOME 'BENEFITS' OF SMOKING," in quotes, 1977. Did you look at that, sir, as part of your review?
A. Yes. No -- I mean I said yes as far as I understood your question. I didn't say that --
Q. In the past?
(Plaintiffs' Exhibit 671 referenced for identification.)
(Witness reviewing document.)
A. Yes, I believe that I did, yes.
Q. Does it present data, or results of studies?
A. It is a review. I mean this is a review. It does present data but it's secondary sources; in other words, reviews a number of studies. The person that -- that is doing the review is reporting studies, so it's not a formal study, it is a review of several studies.
Q. Okay. Was it at all meaningful in terms of your charge having to do with dependence?

A. No.
Q. Do you believe there are aspects of smoking or effects of smoking that are beneficial?
A. I believe that -- first of all, there is literature on -- on -- that argues that there is a -- there are effects of cigarette smoking that are beneficial. Since the literature comes from both sides of the, quote-unquote, great divide, I -- I give credence to -- to -- to the literature, so yes, there are some -- there are reports that I have no reason to doubt about the -- about beneficial effects of smoking.
Q. What are the beneficial effects?
A. Cognitive enhancement, increase -- increased ability to concentrate, calming effect, such like things.
Q. And are those as a result of physiologic action of the cigarette?
A. I don't know.
Q. Are they the result of psychological action of the cigarette?
A. That by definition they will have to be because the variables that I've just described are psychological in nature, so since there was a change in them it has to be psychological. What is the

mechanism that induced those changes? I don't know.
Q. Do you know anything about the effects of smoking on Parkinson's disease?
A. Not even a little bit.
Q. Or Alzheimer's?
A. I know -- I do know in terms of the lit -- some of the literature that there are supposed purportedly beneficial effects of smoking on Alzheimer's, but I am saying that and I am emphasizing as a lay person who has read about that this is not my area of expertise and I cannot evaluate it, but I have heard of reports of some beneficial effects in Alzheimer's. I may even have heard some, although less clear in my mind, some beneficial effects in Parkinson's, but again I have heard that, I am not in a position to evaluate it, it's -- it's not my area of expertise.
Q. Do cigarettes have a beneficial effect in weight control?
A. I think that the answer here is a bit complicated. Is cigarettes -- is cigarette smoking involved in or has an effect on weight regulation? The answer is yes. If somebody will start now taking -- smoking 5 cigarettes a day, and I'm just using that as an example, now today on a regular basis, it

is unlikely to have an effect on -- on their -- their weight. The -- the main thing I think that have been found is that when smokers smoke on a regular basis and for a period of time and then they stop smoking, there is usually an increase in weight. That increase in weight when the -- if the person relapses and continues to smoke is partially ameliorated but not completely. That's what I know about the involvement. So that's not a beneficial -- I don't remember exactly the wording of the question, but it's not a -- it is involved and has some impact under certain conditions on weight regulation.

Q. Let me show you what I've marked as 672. It's a monograph on the pharmacological and toxicological effects of nicotine; is that right?

A. Yes.

Q. And it's dated what year, sir? I think it's in the lower left.

(Plaintiffs' Exhibit 672 referenced for identification.)

A. July 1979.

Q. Okay. Did you review that document?

(Witness reviewing document.)

A. I believe so.

Q. Did it have any bearing on your charge; that is,

to look for things that related to the issue of dependence?

A. No.

Q. It did not?

A. No. Again, before I even look at the thing, I want to remind you and for the record I guess that I am talking specifically here about data and research-driven, significant data results and significant things related to that. No, the answer is no.

Q. Does this monograph present data or research results?

A. I will -- yes, I believe it does, yes.

Q. And does it present data or research results of studies that relate to directly or indirectly addictiveness or dependence?

A. No, not in my opinion.

Q. There is a section at the beginning of page 38 entitled SMOKING BEHAVIOR: ROLE OF NICOTINE IN THE SMOKING HABIT. Do you see that, sir?

(Witness reviewing document.)

A. Yes.

Q. Did you read that at the time you were --

A. I believe so.

Q. -- first furnished this document?

A. Yes, I believe so.
Q. And let me ask you a question about a particular statement if I may.
A. Okay.
Q. As of 1979 when this was done do you believe it to be a true statement that, quote, "There is now increasing evidence that the presence of nicotine may be the major factor responsible for the widespread use of tobacco in all human societies?"
A. No, I do not believe that to be a true statement.
Q. So whoever are the authors of this article were wrong about that?
A. I believe so.
Q. We've talked some over the last two days about the behavior aspects of smoke, having to do with taste and the tactile aspects --
(Reporter interruption.)
Q. -- the tactile aspects of smoking, holding the cigarette and putting it in your mouth and so forth. Are smokeless tobacco products dependence-producing?
A. I have no idea.
Q. Have you ever made that comparison in your mind?
A. No.
Q. If smokeless tobacco products in fact produced a

mild dependence, what, if anything, does that suggest to you about the role of nicotine compared to the behavior aspects of smoking cigarettes?

A. You're asking me to make -- to assume?

Q. Yes?

A. If somebody will show me that smokeless tobacco products produced a dependence by, you know, my definition, significant dependence, I have to say -- first of all I have to examine these smokeless products. I don't know what's in a smokeless tobacco product.

Q. Assume it contains nicotine.

A. And nothing else.

Q. Other products, but --

A. Well then here -- here is the problem. I will then have to determine what is the relative contribution of the various components to -- to the development of that, quote-unquote, "hypothetical dependence".

Q. Have you at any time -- well withdraw that.

Do you know whether there is literature out there in the world medical and scientific literature that compares cigarettes, cigarette smoking to smokeless tobacco products --

A. I am not aware of such literature.

Q. -- and their effects?
A. I'm not aware of such literature, no.
(Plaintiffs' Exhibit 673 referenced for identification.)
Q. 673 is a document entitled "The Action of Nicotine in the Brain,", August 1966. Is this a document you looked at?
(Witness reviewing document.)
A. I believe so.
Q. Does it present data?
A. No.
Q. Does it present research results?
A. It reviews research, yes, but it doesn't present data.
Q. Does it have anything to do with the issue of dependence?
A. No.
(Plaintiffs' Exhibit 674 referenced for identification.)
Q. I have marked as 674 a document that is titled at the top "FILE NOTE," and then there are various sections, July 14th, 1967. Is this a document you looked at, Doctor?
(Witness reviewing document.)
A. Yes.

(Discussion off the stenographic record.)
A. Yes.
Q. Did Exhibit 674 present data or the results of research?
A. It describes research, but it doesn't present here firsthand data, no.
Q. Does it relate to the issue of dependence --
A. No.
Q. -- in any way? Let me show you a particular page that bears Bates number 500012137 in Exhibit 674. Would you read that page.
Did you read that page when you first reviewed the document?
(Witness reviewing document.)
A. Yes, I -- I recall that.
Q. Included on this page is a statement referring to Sir Charles Ellis saying that he had brought out the concept that we, meaning the tobacco company, are a nicotine rather than a tobacco industry. Do you agree with that statement?
A. No.
Q. Why not?
A. Because it's his opinion. I mean first of all again, it is irrelevant to -- to my particular question. It is an opinion of this individual, it is

not a data-driven statement as it is presented. And since -- and then factually since I at many, many occasions in the last two days said that I -- that I considered the role of nicotine to be at best undetermined and more -- a better approximation will be that it -- it plays a relatively minor role in the development of dependence, I can't agree with that -- with that statement, but notwithstanding that, this is an opinion that nothing to do with my attempt to evaluate data-driven conclusions, data that was produced by the tobacco industry.

Q. Well would you agree with me, sir, that a scientist within a tobacco company is likely to know more about the product and its constituents than you would?

A. About the product and its constituents?

Q. Yes.

A. I would assume that that will depend on who the scientist -- what the scientist does. I mean I assume that there are many -- many scientists there that have nothing to do with actual, you know, determination of constituents and products.

Q. Would you agree with me that a scientist within a tobacco company is in a better position to know the actions of effects of the product and its

constituents than you, with all due respect?
A. No, I will not agree with that as necessarily true, no.
Q. Are there, other than nicotine, substances within cigarettes that are capable of producing the mild dependence that you speak of?
MR. NIMS: Objection.
Q. Or play a minor role in the development of dependence, to use your term?
A. I've not aware of any evidence that that is the case.
Q. So as you sit here today you're not able to name for me any substance other than nicotine that may play a minor role in the development of dependence?
MR. NIMS: Objection.
A. That has -- that -- that I have seen evidence that it plays a role, a minor role in the development of minor dependence; the answer is no, I'm not aware of it.
Q. So my statement's correct?
A. Your statement is -- yeah, is correct, so long as we say that it's evidence.
(Discussion off the stenographic record.)
MR. SILBERFELD: Is there something you want to say?

MR. McDONNELL: No.

MR. SILBERFELD: You seem to be bristling.

MR. McDONNELL: I am.

MR. NIMS: He really is.

MR. McDONNELL: I am. I take it you're going to turning to the Philip Morris documents now.

MR. SILBERFELD: I am.

MR. McDONNELL: I'd like to see the documents as you present them to him.

MR. SILBERFELD: That's the same stack you gave me.

MR. McDONNELL: Fine.

MR. SILBERFELD: Thanks.

MR. McDONNELL: Sure.

BY MR. SILBERFELD:

Q. Let me mark as 675 a document entitled DECLARATION OF IAN U-Y-D-E-S-S, Ph.D., February 29, 1976. Is this a document you looked at?

(Plaintiffs" Exhibit 675 referenced for identification.

(Witness reviewing document.)

A. I believe so.

Q. What assistance, if any, was this document to you?

A. None. To me none.

Q. In --
A. And again I don't want to repeat myself, in the context of the framework that I imposed on myself and all this, no.
Q. What is your understanding as to why you were shown this document at all?
A. I have no understanding of why I was shown this document. I was shown it, I read it.
Q. Okay. 676 --
MR. NIMS: What happened to the 666 --
MR. McDONNELL: Cut off?
MR. NIMS: Yeah.
THE WITNESS: Cut off, yeah.
MR. McDONNELL: I didn't see it.
MR. SILBERFELD: You came inspired.
MR. GALE: Oh, oh.
THE WITNESS: Did I contribute to it?
MR. SILBERFELD: Absolutely. You were a major contributing factor.
BY MR. SILBERFELD:
Q. 676 is an excerpt from either a book or a journal entitled "COLD TURKEY IN GREENFIELD, IOWA". Are you familiar with that study.
(Plaintiffs' Exhibit 676 referenced for identification.)

A. Let me just look at that.
Q. Sure.
A. Yeah, I'm familiar with this study but I just wanted to make sure that we're talking about the same thing. Yes.
Q. What is your understanding of what this study hypothesized and proved, if anything?
A. The -- the background was that there was a city, I believe was it Greenfield or --
Q. Yes.
A. -- in Iowa that decided in conjunction I think with a movie called "Cold Turkey" to -- to quit smoking as a -- as a city, as a community project. There were a lot of -- all the -- no, I wouldn't say all, but a lot of what was considered supportive factors were brought to bear on this cessation attempt, and after -- and then after periods of time I think extending, I'm not 100 percent sure, up to 8 months, people were followed in terms of the status of their cessation and/or non-cessation.
Q. Was this study meaningful to you at all --
A. No.
Q. -- in terms of dependence?
A. No.
Q. Why?

A. We have spent a fair amount of time talking about cessation attempts and -- and things like that. I mean just to -- to get numbers of -- of percentages of people that quit or relapsed or this, since I admitted freely that -- that people do relapse when they smoke, in terms of understanding of dependence and the role that -- particularly the role that nicotine plays, I mean that doesn't say one word about that, about -- about this, so I don't find these kinds of surveys of populations meaningful to my understanding of the nature of dependence and/or its mechanisms or anything like that.

Q. Does this paper, Exhibit 676, have any bearing at all on your over-arching opinion that anyone and everyone can quit smoking, if they have the will to do so?

A. No, I think. --.

MR. McDONNELL: Object. Object on foundation ground. You can answer.

MR. SILBERFELD: Go ahead.

A. Yeah, it confirms exactly what I said, that some people find it fairly easy. Some people -- I mean there's a whole range from people who find it difficult and require more than one attempt to quit and some people don't. I think it confirms that some

-- some people quit, some people did not quit, some people quit and then relapsed and then went back to smoking, it confirms that heterogeneity in -- in the population of smokers attempting to quit.

Q. The next document, Dr. Amit, is about four inches thick, but I'm only going to mark the cover page in the interest of the trees in Minnesota. Exhibit 667 is a transcript --

A. 677.

Q. -- 677 sorry, is a transcript of the hearings of the Subcommittee on Health and the Environment. Do you see that, sir?

A. Yes, sir.

Q. Did you review the entire document, even though we're going to only mark the cover page?

A. I can't tell -- I've reviewed, you know, large amounts related to these hearings, but I can't confirm that I have read every page of this because I will have to examine it.

(Plaintiffs' Exhibit 677 referenced for identification.)

Q. Do you recall, see if this refreshes your memory, that within this document are statements of tobacco company executives on various topics, such as whether smoking causes disease?

A. Would you tell me names that might --
Q. Sure. Mr. Sandefur, Mr. Spears, Mr. Tisch, among others?
A. No, I don't. Yeah, yeah, sorry, sorry, sorry, I've mixed it with the -- yeah, I've looked at that.
Q. In this document -- does that refresh your memory as to whether you've read this?
A. Again, yeah, I've said before, I've read -- from the cover, I can tell you that I've read a fair amount related to -- to these hearings, but again, you will agree with me that it still doesn't allow me to say that I read every page in this pile, but if we can settle on that I've read this -- you know, some of this material, then we are in agreement.
Q. Did you at any time in reviewing this document, either in whole or in part, compare the public statements of the tobacco company executives that are mentioned here, some of them I mentioned to you, and the statements and positions found within the companies' internal documents?
A. No.
Q. Is that something you intend to do?
A. No.
Q. Would you expect that, consistent with the truth, the public statements and the internal

documents' statements should be the same?

MR. NIMS: Objection.

Q. Is that something you'd expect?

A. Expect that people would be consistent in their -- in their -- in their position or statements so -- but -- so the answer to that on a general basis is yes, but that's about as far as I can go with it.

Q. And that's about as far as I can go with it. Thank you, Doctor?

A. Thank you. Here's --

MR. McDONNELL: Can we take a minute and talk about whether you want to do any follow up?

MR. NIMS: I don't.

MR. McDONNELL: I'd like to talk, talk to you for a minute.

(Recess from 11:46 to 11:48 a.m.)

EXAMINATION

BY MR. NIMS:

Q. Dr. Amit, I have just one question because those of us listening think there may be some confusion in the record on -- on what you said.

Do you believe that cocaine has a definite withdrawal syndrome?

A. No.

MR. NIMS: That's it.

MR. McDONNELL: That's it.

(The proceedings were in recess at 11:49 a.m.)

(Plaintiffs' Exhibits 659-677, inclusive, were marked for identification at the close of the deposition.)

C E R T I F I C A T E

I, Judy A. Steinke, hereby certify that I am qualified as a verbatim shorthand reporter; that I took in stenographic shorthand the testimony of ZALMAN AMIT, Ph.D., at the time and place aforesaid; and that the foregoing transcript, Volume II, consisting of pages 218 through 343, is a true and correct, full and complete transcription of said shorthand notes, to the best of my ability.

Dated at Deerwood, Minnesota, this 1st day of September, 1997.

Judy A. Steinke
Shorthand Reporter
Notary Public

S I G N A T U R E P A G E

I, ZALMAN AMIT, Ph.D., the deponent, hereby certify that I have read the foregoing transcript, Volume II, consisting of pages 218 through 343, and that said transcript is a true and correct, full and complete transcription of my deposition, except per the attached corrections, if any.

(Please check one.)

_____ Yes, changes were made per the attached

(#) _____ Signature Page Addendums.

_____ I have made no changes.

ZALMAN AMIT, Ph.D.
Deponent

Sworn and subscribed to before me this day of

, .

Notary Public

My commission expires .